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ANNUAL REPORT

OF THE

STREET DEPARTMENT

FOR THE

YEAR 1904



BOSTON
MUNICIPAL PRINTING OFFICE
1905

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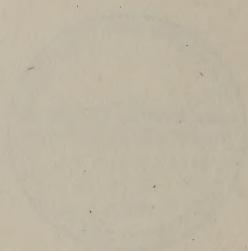
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1904/05

ANNUAL REPORT

STREET DEPARTMENT

YEAR 1904



UNIVERSITY OF ILLINOIS

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HON. PATRICK A. COLLINS,

Mayor of the City of Boston :

SIR, — In compliance with the Revised Ordinances, the annual report of the operation and expenses of the Street Department for the year 1904 is herewith respectfully submitted.

ORGANIZATION.

The work of the department during the past year has been carried on under the same organization that was effected when the consolidated department was created in 1891, and as amended in 1895, the several divisions of the department being as follows :

Central Office,
Boston and Cambridge
Bridges,
Bridge Division,
Ferry Division,

Paving Division,
Sanitary Division,
Sewer Division,
Street-Cleaning Division,
Street-Watering Division.

Each of the above divisions, with the exception of the Central Office and the Boston and Cambridge Bridges, is in charge of a Deputy Superintendent.

The Boston and Cambridge bridges are managed by two commissioners. The Superintendent of Streets was the commissioner for the City of Boston until October 28, 1904,

when the Deputy Superintendent of the Bridge Division was appointed as commissioner, the other commissioner being appointed by the Mayor of the City of Cambridge.

APPROPRIATIONS.

The money assigned for Street Department work for the past year was made available under the following appropriations :

First. — Maintenance: From income of the city raised by taxes. Previous to the commencement of the financial year, February 1, the department estimates of the amounts necessary for the proper maintenance of the various divisions are submitted to His Honor the Mayor, who makes such recommendation as he may deem proper to the City Council. The maintenance appropriations, as passed by the City Council, were as follows :

Central Office	\$20,000 00
Bridge Division	185,000 00
Cambridge and Boston Bridges	20,000 00
Ferry Division	243,600 00
Paving Division	850,000 00
Sanitary Division	653,200 00
Sewer Division	320,000 00
Street-Cleaning Division	410,000 00
Street-Watering Division	165,000 00
Total	<u>\$2,866,800 00</u>

Second. — Work done under appropriations for permanent improvements: There was made available by the City Council, from income of the city raised by taxes, for general new or reconstruction work, as follows :

Street Improvements	<u>\$500,000 00</u>
-------------------------------	---------------------

Third. — Work done under appropriations for permanent improvements: There was made available by the City Council, from loans within the debt limit, for new work as follows :

Paving Division	<u>\$300,000 00</u>
---------------------------	---------------------

Fourth. — In 1891 an Act was passed by the Legislature entitled "An Act Relating to the Location, Laying-out and Construction of Highways in the City of Boston." (Chapter

323, Acts of 1891, and amendments.) Loans under this Act previous to 1901 were outside the debt limit, but by chapter 199 of the Acts of 1901 the city was empowered to borrow the money inside the debt limit. From this fund new streets, assessable on the abutting property, are built. The amount expended the past year was :

Highways, Making of.

Sewers	\$72,718 01
Streets	106,942 81
Total	<u>\$179,660 82</u>

Fifth.—In 1897 an Act was passed by the Legislature entitled “An Act Relative to the Sewerage Works of the City of Boston.” (Chapter 426.) Under this Act the loan is outside the debt limit. From this fund “Sewerage Works” are built.

The amount expended the past year was . . . \$1,012,792 48

Sixth.—In 1901 an Act was passed by the Legislature entitled “An Act Relative to Highways in the City of Boston.” (Chapter 199.) Under this Act the loan is inside the debt limit. From this appropriation street and sewerage works construction in “323” streets may be built. The amount thus expended the past year was :

Construction of Highways Already Laid Out —	
Sewers	\$90,063 13
Streets	30,168 00
Total	<u>\$120,231 13</u>

Seventh.—In 1899 an Act was passed by the Legislature entitled “An Act Relative to Laying Out and Construction of Highways in the City of Boston.” (Chapter 443.) Loans under this Act are outside the debt limit. The amount expended last year was as follows :

Brighton \$8,849 18

Eighth.—In 1903 an Act was passed by the Legislature entitled “An Act Relative to Separate Systems of Drainage.” (Chapter 383.) Loans under this Act are outside the debt limit.

The amount expended last year was . . . \$642,965 95

Ninth.— In 1903 an Act was passed by the Legislature entitled "An Act to Authorize the Construction of a Dam Across the Charles River between the Cities of Boston and Cambridge." (Chapter 465.) The loan under this Act is outside the debt limit.

The amount expended last year for sewerage works was	\$540,063 29
--	--------------

The expenditures under the several appropriations for the year 1904 were as follows:

Maintenance	\$3,184,092 88
Sewerage Works	1,012,792 48
Street Improvements	744,086 89
Highways, Making of	179,660 82
Separate Systems of Drainage	642,965 95
Charles River Basin	540,063 29
Construction of Highways Already Laid Out	120,231 13
Laying Out and Construction of Highways, Brighton	8,849 18
Dorchester street	45,220 60
Bridge, Specials	1,888 97
Hyde Park avenue	19,710 15
Brandón street and Belgrade avenue	5,371 11
Sanitary and Street Cleaning, Specials	145 19
Paving, Specials	119,739 22
 Total	 <u>\$6,624,817 86</u>

BRIDGE DIVISION.

Expenditures.

Maintenance.	Specials.
\$185,269.84.	\$1,888.97.

The Shawmut-avenue bridge over the Boston & Albany and New York, New Haven & Hartford railroad has been entirely reconstructed and opened to travel, and the expense of the rebuilding was met by a special appropriation.

Attention is called to the Huntington-avenue bridge over the Boston & Albany railroad.

This bridge was stripped for examination by the City Engineer and was found to be in a very bad condition, so much so that extensive repairs were necessary to make it safe for travel.

The traffic on this bridge is constantly increasing, and an appropriation should be made as soon as possible for the construction of a new structure at this point as a matter of public safety.

FERRY DIVISION.

Expenditures.

Maintenance.

\$258,126.20.

The absolute necessity for a new coal pocket at the East Boston side of the North Ferry was never more apparent than at the present time. The past winter has been a severe one and traffic by water has been greatly hampered by ice; the present storage facilities for coal are very meagre, and we have had some narrow escapes on account of the scarcity of our coal supply, due solely to the reason that we were unable to store coal in sufficient quantities to carry us through.

An appropriation should be obtained for building a new pocket at the earliest possible moment.

The gates on the boats have been equipped with patent locks, sockets and connections, and the possibility of injury caused by the falling or breaking of the gates has been practically eliminated.

The old piers should be replaced by new ones as soon as possible. These old piers are a source of great annoyance and may at any time become a menace to ferry travel, and should be removed.

PAVING DIVISION.

Expenditures.

Maintenance,
\$1,073,445.42.

Specials.
\$119,739.22.

Work has progressed on Columbia road and Bennington street and the West Roxbury highways, Belgrade and Hyde Park avenues. Granite block paving, with pitch joints on a concrete base, has been laid to the extent of about 23,000 square yards in the business section. Bitulithic pavement has been laid in residential districts to the extent of about 18,000 square yards, and is proving very satisfactory. This pavement is laid with a ten years' maintenance guarantee.

The advisability and absolute necessity of providing for the removal of snow by a special appropriation is once more urged upon the City Council. The expenditures for snow removal come at the most inopportune times, viz., the beginning and ending of the financial year, and furnishes absolutely no basis for planning expenditures for the maintenance of the department, and a special appropriation is requested that the work of maintenance, repairs, etc., may be carried along as it should be, without being hampered by the expense of snow removal, which is something that cannot be foreseen, and therefore cannot intelligently be provided for.

SANITARY DIVISION.

Expenditures.

Maintenance.

\$706,529.89.

The work of this division is greatly hampered by the lack of sufficient dumping places within easy reach of the base of collections, and the placing of scows for the reception of the collections is again respectfully urged upon you.

There should be a dumping station at the South End and one somewhere in the vicinity of the Charlestown bridge, so that the collections of the South End, Back Bay and Roxbury and a part of the West Roxbury and Dorchester districts could be hauled to an up-town disposal station, while those of the North and West Ends and Charlestown could be delivered to a down-town station nearer the base of collection than Fort Hill wharf.

An extension of the "third system," so-called, that is, the separation of offal, ashes and refuse and the depositing of each in a separate receptacle, is recommended to cover all parts of the city where this system does not now obtain, to the end that less fault may be found by the board of health and owners of vacant lots where the department has obtained permission to dump.

The establishment of division yards in the Dorchester and West Roxbury districts is a matter of vital importance to the residents of these sections, and would remove all cause for complaint as to service. The stables and sheds should be thoroughly overhauled, and an appropriation for this purpose provided.

SEWER DIVISION.

Expenditures.

Maintenance.
\$324,360.72.

Specials.
\$2,195,821.72.

A great deal of necessary surface drainage work proposed for many years past has been started during the year and much of it completed.

The work in the Back Bay Fens has been pushed rapidly and a start made in removing the sewage deposit from the Fens ponds.

Considerable work in the territory adjacent to the Stony-brook conduit has been done in order that the Back Bay Fens conduit may be utilized by this territory and causes of complaint removed thereby.

The completion of the "Separate System" in the Talbot avenue and Lauriat avenue districts made during the year and the practical completion of this system in Roxbury and the Back Bay will afford immeasurable relief to these sections and will remove many fertile sources of suits for damages.

The old channels of Stony brook, from Roxbury Crossing to the Back Bay Fens, should be rebuilt, as they are in a dangerous condition, and a covered channel from Jamaica Plain south to Forest Hills should be constructed as soon as possible.

STREET CLEANING DIVISION.

Expenditures.

Maintenance.
\$434,172.62.

Specials.
\$145.19.

The work of this division is constantly increasing for the reason that the public has been educated to clean streets, and even in the suburban districts the demand for more frequent cleanings is heard. An extension of the system to Roxbury and West Roxbury, an extension of the lines in Dorchester must soon be made to satisfy public demand.

The experiment tried in a portion of Dorchester has resulted in the demand for its extension to the whole of the district, and the only reason for failure on the part of the department to comply has been insufficient funds. Money should be made available for this purpose as speedily as the financial condition of the city warrants it.

The dumping question dwelt upon at some length in the Sanitary Division résumé applies with equal force to this division, and is a source to us at present of considerable expense.

The South Boston stable is in a very bad condition both as to the structural and sanitary conditions, and another stable should be obtained that the horses, rolling stock and tools may be properly cared for.

The push cart patrol service is very warmly commended as in the past, and this service is one that the business men are calling for more and more every day, and is without doubt the best way to keep the streets of the business section clean and in a presentable condition to the public.

STREET WATERING DIVISION.

Expenditures.

Maintenance.
\$165,071.08.

During the past year four hundred and sixty-five (465) miles of streets were regularly watered, and four hundred thirty-five million, seven hundred twenty-three thousand, six hundred (435,723,600) gallons of water were used in the work.

**Recapitulation of Expenditures for the Twelve Months ending
January 31, 1905.**

OBJECT OF APPROPRIATIONS.	Current Expenses.	Special Appropriations.	Totals.
Street Department:			
Central Office.....	\$20,853 21		\$20,853 21
Boston and Cambridge Bridges.....	16,263 90		16,263 90
Bridge Division.....	185,269 84	\$1,888 97	187,158 81
Ferry Division.....	258,126 20		258,126 20
Paving Division.....	1,073,445 42	119,739 22	1,193,184 64
Sanitary Division.....	706,529 89		706,529 89
Sewer Division.....	324,360 72	2,195,821 72	2,520,182 44
Street Cleaning Division.....	434,172 62	145 19	434,317 81
Street Watering Division.....	165,071 08		165,071 08
Street Improvements.....		744,086 89	744,086 89
Highways, Making of.....		179,660 82	179,660 82
Construction of Highways Already Laid Out.....		120,231 13	120,231 13
Laying Out and Construction of Highways, Brighton.....		8,849 18	8,849 18
Dorchester street.....		45,220 60	45,220 60
Hyde Park avenue.....		19,710 15	19,710 15
Brandon street and Belgrade avenue...		5,371 11	5,371 11
Totals.....	\$3,184,092 88	\$3,440,724 98	\$6,624,817 86

Financial Statement of the Street Department Appropriation.*February 1, 1904, to January 31, 1905.***Maintenance.**

APPROPRIATION.	Appropriations and Transfers during 1904.	Revenue.	Total Credits.	Expenditures for the twelve months ending Jan. 31, 1905.
Street Department :				
Central Office.....	¹ \$20,853 21	.....	\$20,853 21	\$20,853 21
Bridge Division.....	² 184,999 80	\$270 04	185,269 84	185,269 84
Boston and Cambridge Bridges,	³ 16,263 90	.....	16,263 90	16,263 90
Ferry Division... ..	⁴ 257,476 20	650 00	258,126 20	258,126 20
Paving Division.....	⁵ 1,072,682 32	763 10	1,073,445 42	1,073,445 42
Sanitary Division.....	⁶ 698,515 89	8,014 00	706,529 89	706,529 89
Sewer Division.....	⁷ 323,803 03	557 69	324,360 72	324,360 72
Street Cleaning Division.....	⁸ 434,172 62	.....	434,172 62	434,172 62
Street Watering Division.....	⁹ 164,999 08	72 00	165,071 08	165,071 08
Totals.....	\$3,173,766 05	\$10,326 83	\$3,184,092 88	\$3,184,092 88

¹ Appropriation		\$20,000 00	
Transferred from Cambridge and Boston Bridges		853 21	
			<u>\$20,853 21</u>
² Appropriation		\$185,000 00	
Transferred to City Treasury		20	
			<u>\$184,999 80</u>
³ Appropriation		\$20,000 00	
Transferred to Central Office		853 21	
Transferred to Ferry Division		2,882 89	
			<u>\$16,263 90</u>
⁴ Appropriation		\$243,600 00	
Transferred from Boston and Cambridge Bridges		2,882 89	
Transferred from City Treasury		10,993 31	
			<u>\$257,476 20</u>
⁵ Appropriation		\$850,000 00	
Transferred from Street Improvements		115,000 00	
Transferred from City Treasury		107,682 32	
			<u>\$1,072,682 32</u>
⁶ Appropriation		\$653,200 00	
Transferred from City Treasury		45,315 89	
			<u>\$698,515 89</u>
⁷ Appropriation		\$320,000 00	
Transferred from City Treasury		8,803 03	
			<u>\$323,803 03</u>
⁸ Appropriation		\$410,000 00	
Transferred from Surplus Revenue		24,172 62	
			<u>\$434,172 62</u>
⁹ Appropriation		\$165,000 00	
Transferred from City Treasury		92	
			<u>\$164,999 08</u>

Comparative Table Showing Cost of Maintenance of the Street Department since 1895.

DIVISION.	1895-1896.	1896-1897.	1897-1898.	1898-1899.	1899-1900.	1900-1901.	1901-1902.	1902-1903.	1903-1904.	1904-1905.
Central Office.....	\$18,315 79	\$18,781 85	\$17,789 85	\$19,186 24	\$18,799 41	\$19,994 66	\$24,999 83	\$20,386 04	\$21,092 06	\$20,853 21
Bridge.....	119,716 00	119,963 55	126,529 32	129,353 03	120,408 72	138,580 56	170,866 18	164,082 13	171,789 52	185,269 84
Boston and Cam- bridge Bridges...	12,537 33	13,835 54	14,403 92	13,569 89	15,998 18	17,353 27	18,394 97	16,400 04	16,715 12	16,263 90
Ferry.....	209,911 30	218,353 10	219,983 24	213,055 79	211,822 87	236,999 91	248,754 06	227,088 29	254,535 23	258,126 20
Paving.....	599,099 34	559,934 39	573,963 14	553,291 72	705,432 68	753,562 34	837,831 07	780,236 39	785,946 38	808,604 99
Removal of snow,	84,809 08	68,741 07	116,224 20	172,963 48	154,625 18	29,138 38	93,518 45	121,899 66	114,395 94	264,840 43
Sanitary.....	432,778 52	477,241 54	492,670 56	508,152 88	567,107 81	609,664 67	623,000 50	675,319 64	654,975 87	706,529 89
Sewer.....	289,596 07	276,615 25	295,522 25	337,373 27	347,133 64	362,060 24	345,669 05	301,743 69	288,679 26	334,360 72
Street Cleaning....	305,998 50	310,266 39	309,993 38	316,052 73	322,951 15	339,747 23	356,443 72	392,802 09	403,626 11	434,172 62
Street Watering....	76,424 70	71,211 81	² 78,736 72	138,728 57	174,625 97	174,742 45	164,259 36	160,147 25	164,104 74	165,071 08
Totals.....	\$2,140,177 63	\$2,184,944 49	\$2,245,816 68	\$2,401,630 60	\$2,638,905 61	\$2,681,843 71	\$2,888,739 19	\$2,860,705 22	\$2,875,850 23	\$3,184,092 88

¹ Expenditures in Ferry Division for seven (7) months only, as this division was merged into the Street Department July 1, 1896.² Not including water bills of \$76,930.40, not previously paid by Street Watering Division.

**List of Contracts from February 1, 1904, to January 31, 1905,
made by the Street Department.**

Paving Blocks.

CONTRACT.	Awarded to	Dated	Price per M delivered on Wharves.
Large paving blocks.....	New England Granite Company.....	June 3, 1904....	\$70 00
Large paving blocks.....	S. & R. J. Lombard....	June 3, 1904....	70 00
Large paving blocks.....	Rockport Granite Com- pany.....	June 3, 1904....	70 00
Large paving blocks.....	Thomas Lahey.....	June 13, 1904....	70 00

Bank Gravel and Sand.

DISTRICT.	Awarded to	Dated	Price per double load of 40 cubic feet.	
			Gravel.	Sand.
South Boston.....	James McGovern.....	Feb. 1, 1904....	\$1 45	\$1 45
East Boston.....	J. F. Brennan & Co....	Feb. 1, 1904....	1 40	1 40
Charlestown.....	J. P. O'Riorden.....	Feb. 1, 1904....	1 40	1 05
Brighton.....	J. H. Sullivan.....	Feb. 1, 1904....	1 40	1 40
West Roxbury.....	Thomas F. Minton.....	Feb. 1, 1904....	1 35	1 35
Dorchester.....	James McGovern.....	Feb. 1, 1904....	1 50	1 50
Roxbury.....	William Gilligan.....	Feb. 1, 1904....	1 65	1 65
City Proper: District 8.....	William Gilligan.....	Feb. 1, 1904....	1 60	1 25
City Proper: District 9.....	J. P. O'Riorden.....	Feb. 1, 1904....	1 60	1 60
City Proper: District 10.....	J. P. O'Riorden.....	Feb. 1, 1904....	1 60	1 10

NOTE. — Single loads to cost one-half of the foregoing prices.

Spruce Lumber.

DISTRICT.	Awarded to	Dated	Price per M ft. B. M. rough.
South Boston.....	Curtis & Pope Lumber Co...	Feb. 1, 1904.....	\$20 90
East Boston.....	Curtis & Pope Lumber Co...	Feb. 1, 1904.....	21 90
Charlestown	G. Fuller & Son.....	Feb. 1, 1904.....	22 45
Brighton	G. Fuller & Son.....	Feb. 1, 1904.....	22 00
West Roxbury	Curtis & Pope Lumber Co...	Feb. 1, 1904.....	21 90
Dorchester.....	Curtis & Pope Lumber Co...	Feb. 1, 1904.....	20 90
Roxbury	Curtis & Pope Lumber Co...	Feb. 1, 1904. ...	20 90
City Proper	Curtis & Pope Lumber Co...	Feb. 1, 1904.....	20 50

Beach Gravel.

DISTRICT.	Awarded to	Dated	Price per ton delivered on wharves.
City Wharves.....	Hugh Farrell.....	Jan. 30, 1904....	\$0.59

Edgestones.

CONTRACT.	Awarded to	Dated	Price per lin- eal foot.
Furnishing 50,000 lineal feet edgestone, deliv- ered on wharves.....	Simpson Brothers, Corpora- tion.....	March 5, 1904...	\$0.70

Iron Castings.

CONTRACT.	Awarded to	Dated	Price per 100 lbs., de- livered at yards.
Iron Castings :.....	The Sessions Foundry Com- pany	Jan. 30, 1904....	\$1 54

Coal.

CONTRACT.	Awarded to	Dated	Price per ton, 2,240 lbs.
1,700 tons New River, Ferry Wharves	W. K. Niver Coal Company	March 10, 1904..	\$4 85
10,000 tons, Pumping Station, Dorchester.....	Henry F. Kiley.....	April 30, 1904...	3 65
10,000 tons, Ferry Wharves,	Henry F. Kiley.....	April 30, 1904...	3 65

Leasing Ledge Lots.

CONTRACT.	Lessors	Dated	Price per ton for stone removed.
¹ Lease of ledge on Columbia road, near Brunswick st. . .	W. J. Wilcox <i>et als.</i> ,	March 22 and June 12, 1901..	\$0.10
² Lease of ledge on Centre st., between Allandale and Walter sts.....	Thomas Minton....	May 10, 1902....	.18
² Lease of ledge on Kenney st., near Day st.....	James W. Kenney..	June 7, 1902....	.17
² Lease of ledge on Rosseter st.,	William J. Emerson,	July 14, 1902....	.18
² Lease of ledge on Heath st., near Day st.....	Frederick Bleiler..	June 8, 1903....	.18

¹ Expires March 22, 1906. ² Expires February 1, 1906.

Lease of Land.

CONTRACT.	Lessors.	Dated	Terms.
Lease of wharf, 466 to 470 Atlantic ave.....	J. H. Hecht.....	February 19, 1898, for ten years.....	First 5 years \$10,000 per year. Last 5 years \$11,500 per year. Taxes and water rates and interest at 6 per cent per annum on all amounts paid by the lessor for public assessments laid upon the premises after March 1, 1898.
Lease of wharf, etc., Revere st.....	J. J. Costello.....	July 20, 1899, for ten years.....	\$6,500 per year and all taxes during the first 5 years, and \$7,250 per year and all taxes during the second five years.
Lease of a portion of Glendon Wharf and stable on said wharf.....	Blodgett & Whidden.....	May 14, 1900.....	3,000 per year and all taxes for 10 years.
Lease of a portion of Packard's Wharf.....	Widow and heirs of Henry C. Snow.....	June 20, 1900.....	4,000 per year for 5 years.
Lease of land and stable on Columbia road and Old Harbor st. (Sewer Division).....	Charles T. Gallagher, Trustee.....	February 26, 1901.....	600 per year for 5 years.
Lease of land at Squantum park.....	Charles W. Clapp, Lessee.....	April 24, 1901.....	25 per year paid to city for 5 years.
Lease of land, Spectacle Island, for location of Garbage Disposal Plant.....	N. Ward Company.....	November 7, 1901.....	10,000 per year for 10 years, to be paid by the New England Sanitary Product Company.
Lease of land and stable on West First st. (Sanitary Division).....	Albert G. and Emma B. Frost, Trustees.....	November 20, 1901.....	900 per year and water rates for 5 years.
Lease of land and stable on H and East Second sts. (Street-Cleaning Division).....	M. J. Mahoney <i>et al.</i>	December 28, 1901.....	900 per year for 5 years.
Lease of wharf Chelsea st.....	J. F. Brennan & Co.....	February 21, 1903.....	180 per year paid to city
Lease of land and flats at Jeffries Point, East Boston, for maintaining a public landing.....	George C. Fitzpatrick.....	May 1, 1904.....	350 per year.
Lease of storehouses under Charlestown bridge.....	M. P. Coleman & Co., Lessee.....	March 15, 1904.....	728 per year paid to city.

Quarrying and Cutting Stone, Etc.

CONTRACT.	Awarded to	Dated	Price.
Quarrying stone from ledge on Columbia road, near Brunswick st.....	H. P. Nawn.....	May 15, 1902.....	\$0.80 per ton.
Quarrying stone from ledge on Codman st	Patrick McGovern.....	June 13, 1902 .....	.70 per ton.
Quarrying stone from ledge on Kenney st., near Day st....	Patrick F. Donovan.....	June 13, 1902 .....	.70 per ton.
Quarrying stone from ledge on Centre st., between Allandale and Walter sts.....	Thomas F. Minton.....	July 26, 1902.....	.70 per ton.
Quarrying stone from ledge on Chestnut Hill ave., Brighton,	Michael Kiernan.....	August 20, 1902.....	.70 per ton.
Quarrying stone from ledge on Rosseter st., Dorchester....	James McGovern.....	August 25, 1902.....	.70 per ton.
Quarrying stone from ledge on Heath st., near Day st.....	Patrick F. Donovan.....	April 7, 1904.....	.70 per ton.
Quarrying stone from ledge on Dimock st.....	Mark H. Lynch.....	April 30, 1904.....	.70 per ton.

Collecting and Removing Ashes.

CONTRACT.	Awarded to	Dated	Price.
Collecting and removing ashes, etc., in the South Dorchester District.....	Denis D. Flynn ..	March 10, 1904.....	\$5,900 per year for 2 years.
Collecting and removing ashes, etc., in the North Dorchester District.....	John D. Lyons.....	March 29, 1904.....	8,580 per year for 2 years.

Collecting and Removing House Offal.

CONTRACT.	Awarded to	Dated	Price.
Collecting and removing house offal, etc., in the East Boston District.....	Thomas Mulligan.....	February 4, 1904.....	\$8,400 per year for 2 years.
Collecting and removing house offal, etc., in the Brighton District.....	John Newbury.....	May 10, 1904.....	2,600 per year for 2 years.
Collecting and removing house offal, etc., in the Dorchester District	M. Crowne & Co.....	June 9, 1904.	4,380 per year for 2 years.

Paving and Regulating.

CONTRACT.	Awarded to	Dated	Cost of contract, as per estimated quantities, not including materials furnished by the City.
Dorchester st., between West Eighth st. and Dorchester ave.....	William J. Rafferty.....	April 29, 1904.....	\$7,709 20
West Dedham st., between Shawmut ave. and Tremont st.....	John E. Burns & Co.	June 23, 1904.....	1,200 00
Causeway st., between Haverhill and Medford sts.....	D. J. Kiley.	June 24, 1904.....	3,852 28
Public Alley No. 303, from Pinckney st. southerly	Benj. M. Cram	June 24, 1904.....	175 00
Norfolk ave., between Hampden and Magazine sts.....	Thomas McMan.....	June 30, 1904.....	1,600 00
Roxbury and Washington sts, from Guild row across Marvin st.....	H. P. Nawn	June 30, 1904.....	1,375 00
Dish gutters, Canterbury st., between Ashland st. and railroad bridge.....	Thos. J. Shea	July 1, 1904.....	900 00
Front st., between Warren ave. and Austin st.....	P. Brennan & Co.....	July 1, 1904.....	4,672 10
Bulard st., between Bowdoin ave. and Bowdoin st.....	John E. Gill.....	July 6, 1904.....	1,080 00
Edgestones and gutters, Cambridge st., between Union sq. and Harvard ave.....	Michael J. Coyle.....	July 6, 1904.....	1,000 00

Paving and Regulating.—Continued.

CONTRACT.	Awarded to	Dated	Cost of contract, as per estimated quantities, not including materials furnished by the City.
Court st., from westerly side of Old Court House to Tremont st.	Benj. M. Cram.	July 6, 1904	\$1,978 00
Haynes st., between Marginal and Orleans sts.	Conlin, Ward & Co.	July 7, 1904	1,550 00
Edgestones and gutters, Bellevue st., between Brookline ave. and Park st.,	Philip Doherty.	July 7, 1904	1,800 00
Monument st., between Medford and Bunker Hill sts.	P. Brennan & Co.	July 8, 1904	1,950 00
Bolton st., between E and Dorchester sts.	John T. Shea, Jr.	July 8, 1904	1,739 00
Norfolk ave., between Marshfield and East Cottage sts.	Joseph B. O'Rourke	July 9, 1904	1,900 00
West Seventh st., between C and D sts.	William Higgins.	July 11, 1904	1,200 00
Northampton st., between Tremont st. and Columbus ave.	Peter Gilligan.	July 11, 1904	1,100 00
Newland st., between West Dedham and West Brookline sts.	Hub Construction & Supply Co.,	July 12, 1904	850 00
Edgestones and gutters, Poplar st., between Washington and Sycamore sts.,	Thomas F. Brodenick.	July 12, 1904	975 00
Dorchester ave., between Columbia road and Mt. Vernon st.	Joseph B. O'Rourke	July 13, 1904	625 00
Albion st., between Dover and Castle sts.	John E. Burns.	July 19, 1904	1,750 00
Kneeland st., between Atlantic and Harrison aves.	James J. Coughlan.	July 21, 1904	9,000 00
Boylston st., from bridge over the Boston & Albany Railroad to Massachusetts ave.	James J. Coughlan.	July 23, 1904	1,732 00
Neponset ave., between Minot st. and Neponset bridge.	John E. Gill.	August 3, 1904	1,851 25
Lamarine st., from north side of Hoffman st. to north side of Wyman st.	James Doherty.	August 11, 1904	1,700 00
G st., between East Eighth st. and Columbia road.	Ryan & O'Brien.	August 22, 1904	500 00
Compton st., between Tremont and Village sts., minus Albion st.	John E. Burns.	August 22, 1904	575 00
Dudley st., between Mt. Pleasant ave. and Mt. Pleasant pl.	Peter Gilligan.	August 22, 1904	835 00

Tremont st. (east side), between Northampton and Lenox sts.....	Peter Gilligan.....	August 22, 1904.....	1,175 00
F st., between West First and West Second sts.....	John T. Shua, Jr.....	August 25, 1904.....	600 00
Hollis st., from Washington st. 120 feet towards Tremont st.....	William H. Glenn.....	August 25, 1904.....	400 00
E st., between West Seventh and West Eighth sts.....	William Higgins.....	September 6, 1904.....	1,400 00
Saratoga st., from railroad crossing across Swift st.....	Ward & Conlon.....	September 26, 1904.....	1,550 00

¹ Artificial Stone Sidewalks.

CONTRACTOR.	Dated	Price per Square Foot.	CONTRACTOR.	Dated	Price per Square Foot.
Carr & Andrews Corporation.....	March 28, 1904.....	\$0.06	Simpson Bros. Corporation.....	March 24, 1904.....	\$0.06
Thomas J. Hind.....	March 28, 1904.....	.06	Warren Bros. Company.....	March 28, 1904.....	.06
W. A. Murtfeldt Company.....	March 28, 1904.....	.06	Boston Granolithic Company.....	August 25, 1904.....	.06

¹ These walks are guaranteed by a surety company bond for ten (10) years from date of completion, and were laid on various public streets where the contractor had agreements with the abutters.

Furnishing and Laying Artificial Stone Sidewalks.

CONTRACT.	Awarded to	Dated	Price per Square Foot.
School street, in front of City Hall.....	W. A. Murtfeldt Company.....	June 4, 1904.....	\$0.20
Court street, in front of the Old Court House.....	Warren Bros. Company.....	July 18, 1904.....	.17½

Paving with Trinidad Asphalt.

CONTRACT.	Awarded to	Dated	Price.
Kilby st., between State and Central sts.....	Barber Asphalt Paving Co...	May 11, 1904.....	(B) \$2.50 per square yard. (C) 4.50 per cubic yard. (E) 9.00 per cubic yard.
Court st., between Washington st. and westerly side of Old Court House..	Barber Asphalt Paving Co...	May 25, 1904.....	(A) 3.25 per square yard. (B) 2.50 per square yard. (C) 4.50 per cubic yard. (D) 1.05 per cubic yard. (E) 9.00 per square yard. (F) 0.50 per cubic yard. (G) 0.21 per lineal foot. (H) 0.35 per square yard.
Boylston st., between St. Cecilia st. and Massachusetts ave.....	Barber Asphalt Paving Co...	June 15, 1904.....	(A) 3.25 per square yard. (B) 2.50 per square yard.
Barton court, between Brighton and Barton sts.....	Barber Asphalt Paving Co...	June 30, 1904.....	(A) 3.25 per square yard. (B) 2.50 per square yard.
Roxbury and Washington sts., from Guild row across Marvin st.....	Barber Asphalt Paving Co...	July 14, 1904.....	(A) 3.25 per square yard.
Court sq., westerly roadway.....	Barber Asphalt Paving Co...	July 15, 1904.....	(B) 2.50 per square yard. (C) 4.50 per cubic yard. (D) 1.05 per square yard. (E) 9.00 per cubic yard. (F) 0.50 per square yard.
North Bennet st., between Hanover and Salem sts.....	Barber Asphalt Paving Co...	July 21, 1904.....	(A) 3.25 per square yard. (I) 0.25 per square yard. (F) 0.50 per square yard. (G) 0.18 per lineal foot. (H) 0.25 per square yard.
E st., between West Seventh and West Eighth sts.....	Barber Asphalt Paving Co...	Sept. 6, 1904.....	(A) \$3.25 per square yard.

Columbus ave., from 100 feet south of Ferdinand st. to bridge over Boston & Albany Railroad.....	Barber Asphalt Paving Co....	Sept. 6, 1904.....	(A) 3.25 per square yard. (D) 1.20 per square yard. (F) 0.65 per square yard. (G) 0.21 per square yard. (H) 0.35 per square yard. (I) 0.65 per square yard.
Hawesst., between Congress and Kilby sts.....	Barber Asphalt Paving Co....	Sept. 14, 1904.....	(A) 3.25 per square yard. (B) 2.50 per square yard.
Dorchester st., easterly corner of Vinton st., in front of the M. E. church.....	Barber Asphalt Paving Co....	Sept. 21, 1904.....	(A) 3.25 per square yard.
Harris st., between Hanover and North sts.....	Barber Asphalt Paving Co....	Sept. 22, 1904.....	(A) 3.25 per square yard. (B) 2.50 per square yard.

EXPLANATION OF LETTERS.

- (A) Furnishing and laying a 6-inch American cement concrete base, a 1½-inch wearing surface and a 1½-inch binder, and guaranteeing the same for a period of ten (10) years after completion.
- (B) Finishing and laying a 2-inch wearing surface and a 1½-inch binder on existing concrete base and guaranteeing the same for a period of ten (10) years after completion.
- (C) Furnishing and laying a 6-inch American cement concrete base.
- (D) Laying granite block paving and crosswalk flagging with pitch joints on a concrete base.
- (E) Furnishing and laying extra bituminous binder.
- (F) Excavation for sub-grading, including paving blocks barred up and removed.
- (G) Excavating and setting edgelines.
- (H) Laying brick sidewalks.
- (I) Granite block paving and crosswalk flagging, gravel joints on gravel base.

1 Repairing Asphalt.

CONTRACT.	Awarded to	Dated	Price.
Repairing Trinidad Lake asphalt pavement.....	Barber Asphalt Paving Co....	April 1, 1904.....	\$2.50 per square yard. New concrete base, \$0.75 per square yard.
Repairing Sicilian Rock asphalt pavement.....	Barber Asphalt Paving Co....	June 15, 1904.....	\$2.50 per square yard. New concrete base, \$0.75 per square yard.

¹ These repairs are guaranteed for a period of three (3) years after completion.

Sewer Construction Under Chapter 426 of the Acts of 1897, and Amendments.

CONTRACT.	Awarded to	Dated	Cost of contract as per estimated quantities, not including materials furnished by the City.
Sewerage works, Wyoming st., between Wabeno st. and Humboldt ave..	John E. Burns & Co.....	March 28, 1904.....	\$1,935 50
Pipe drains in Ashland st., between Washington and Florence sts.....	H. A. Penniman.....	April 2, 1904.....	1,060 20
East Boston low level sewer, Section 1, in Addison st., between Chelsea and Kneller st.	Gow & Palmer.....	April 12, 1904.....	16,213 75
Sewerage work in Mills st., between Dale and Rockland sts.....	John E. Burns & Co.....	April 13, 1904.....	1,231 50
Pipe drains in Mountain ave., from Lauriat ave. 500 feet southerly.....	John McMorrow.....	April 20, 1904.....	1,904 60
Sewerage works in Bower st., between Sherman st. and Humboldt ave....	Thomas H. Connolly.....	April 20, 1904.....	1,692 50
Pipe sewer in Greenock st., between Blue Hill ave. and Harvard st.....	Jeremiah Bradley.....	April 20, 1904.....	945 00
Pipe sewer in Village st., between Compton and Castle sts.....	John Slattery.....	April 22, 1904.....	1,812 00
Pipe sewer in Woolson st., between existing sewer and Norfolk st.....	P. Brennan & Co.....	April 22, 1904.....	1,995 00
Sewerage works in Park st., between Washington and Merlín sts.....	John E. Gill.....	April 22, 1904.....	1,707 50
Stony brook foul flow conduit, Section 6, in the Back Bay Fens.....	Metropolitan Contracting Co....	April 29, 1904.....	Actual cost, plus 15 per cent.
Pipe drains in Kittredge st., between Sycamore and Whitford sts.....	H. A. Penniman.....	April 29, 1904.....	\$866 50
Pipe drains in Hardwick st., between Bigelow and Dunboy sts.....	A. A. Young & Co.....	May 2, 1904.....	1,142 70
Pipe drains in Newton st., from Brooks st. 335 feet northwesterly.....	M. J. Coyle.....	May 10, 1904.....	642 50
Pipe drains in Beaumont st., from Carruth st. easterly to Summit.....	John T. Shea, Jr.....	May 10, 1904.....	912 50
Pipe drains in Park st., between Anawan ave. and Oriole st.....	Thomas H. Connolly.....	May 10, 1904.....	1,185 20

Pipe surface drains in River st., between Sturbridge and Idaho sts.....	John A. Costello & Co.....	May 10, 1904.....	1,242 25
Pipe drains in Linnet st., from La Grange st. 240 feet southwest of Bellevue st.....	William J. Barry.....	May 10, 1904.....	1,951 50
Pipe surface drain in Butler st., between Adams and Richmond sts.....	George J. Regan.....	May 10, 1904.....	704 00
Pipe drains in Kensington st., between Kingsbury and Elmore sts.....	John E. Burns & Co.....	May 10, 1904.....	1,324 25
Pipe surface drains in Bailey st., between Dorchester ave. and Washington st.....	D. E. Coleman.....	May 11, 1904.....	1,102 50
Pipe drains in Bennington st., south side from Saratoga st. to a point opposite Ashley st.....	Conlin, Ward & Co.....	May 11, 1904.....	1,305 00
Pipe catch-basin drains in Conant st., between Huntington ave. and St. Alphonsus st.....	John McCourt.....	May 11, 1904.....	408 40
Pipe sewer in Bearse st., from Medway st. 350 feet northeasterly to summit.....	Robert Eagar.....	May 11, 1904.....	1,045 00
Pipe surface drains in Rowena st., between Bushnell and Carruth sts.....	John E. Gill.....	May 11, 1904.....	464 00
Pipe surface drains in Ashmont st., between Bushnell st. and Arundel park.....	P. Brennan & Co.....	May 12, 1904.....	1,122 00
Pipe sewers and drains in Humboldt ave., between Brookledge and Seaver sts.....	James J. Coughlan.....	May 12, 1904.....	908 55
Pipe drains in Clifford st., from Blue Hill ave. to existing drain.....	John Slattery.....	May 14, 1904.....	1,986 75
Sewerage works in Belgrade ave., between Corinth and Aldrich sts., Section 1.....	McBride & Co.....	May 14, 1904.....	8,564 50
Pipe drains and catch-basins in Dorchester st., between Dorchester ave. and West Eighth st.....	William J. Rafferty.....	May 14, 1904.....	1,669 50
Pipe sewer and drain in Mozart st., from Walter st. 200 feet northerly...	H. A. Penniman.....	May 19, 1904.....	590 00
Pipe surface drains in Carruth st., between Weyanoke and Ashmont sts.,	John McMorrow.....	May 21, 1904.....	1,876 25
Pipe drains in Parker Hill ave., from angle in street to 1,130 feet easterly.....	Peter Gilligan.....	May 23, 1904.....	1,428 45
Pipe sewer in Clapp place, from Roseclair st. to existing sewer.....	Stephen Shaughnessy.....	May 25, 1904.....	561 50
Pipe drains in Mayfair st., between Elmore and Bainbridge sts.....	Charles J. Jacobs.....	June 1, 1904.....	1,528 00

Sewer Construction Under Chapter 426 of the Acts of 1897, and Amendments. — *Continued.*

CONTRACT.	Awarded to	Dated	Cost of contracts, as per estimated quantities, not including materials furnished by the City.
Pipe drains in Schuyler st., between Maple st. and Elm Hill ave.....	John E. Burns & Co.....	June 3, 1904.....	\$1,386 00
Pipe sewer and drains in Barton ct., between Barton and Brighton sts.,	James J. Coughlan.....	June 3, 1904.....	1,690 00
Pipe sewers and drains in Bennington st., between Prescott and Bremen sts.....	Conlin, Ward & Co.....	June 3, 1904.....	1,081 00
Pipe sewer in Vose st., between Butler and Medway sts.....	John A. Costello & Co.....	June 4, 1904.....	2,791 75
Pipe sewer in Rockville st., between Oakland st. and Blue Hill ave.....	Joseph Todesca.....	June 7, 1904.....	1,975 50
Sewerage works in Hyde Park ave., between Walk Hill st. and Larch place, Section 1.....	Anthony Cefalo.....	June 10, 1904.....	7,460 33
Pipe drains in Esmond st., between Blue Hill ave. and Bradshaw st.....	George M. Bryne.....	June 11, 1904.....	1,597 35
Pipe sewers and drains in Arborway, from Custer st. 570 feet southerly,	John F. Cullen.....	June 13, 1904.....	955 15
Pipe sewers and drains in Willow ct., from existing sewer to Field's ct.,	John E. Burns & Co.....	June 13, 1904.....	1,183 00
Sewerage works in private land, between Butler and Bennington sts.....	Patrick McGovern.....	June 13, 1904.....	Actual cost, plus 15 per cent.
Pipe sewer and drain in Beech st., between existing sewer, 100 feet northwest of Kittredge st. and summit of hill.....	Ryan & O'Brien.....	June 14, 1904.....	\$1,165 25
Spring st. brook conduit, in Powell and Summer sts.....	Thomas F. Welch.....	June 14, 1904.....	2,169 00
Culvert under Boston & Maine Railroad, about 1,300 feet north of Addison st.....	John F. Lynch.....	June 16, 1904.....	4,001 25
Pipe sewer in Providence st., from Berkeley st. 250 feet easterly.....	John Slattery.....	June 20, 1904.....	975 00
Pipe drains in Camden st., between Columbus ave. and Watson st.....	John E. Burns & Co.....	June 20, 1904.....	575 40
Pipe drains in Wayne st., between Blue Hill ave. and Maple st.....	Thomas H. Connolly.....	June 20, 1904.....	1,343 45
Pipe sewers in Edgewood st., between Blue Hill ave. and Southwood st.,	Dennis E. Coleman.....	June 20, 1904.....	1,950 00

STREET DEPARTMENT.

25

Pipe sewers and drains in Rowe st., between Ashland and Seymour sts.,	Edward J. Hayden.....	June 22, 1904.....	1,689 90
Pipe surface drains in Adams st., between Richmond and Butler sts....	John McMorrow.....	June 27, 1904.....	1,425 30
Pipe sewer and drain in Stratton st., between Bigelow and Atkins sts....	Thomas J. Young & Co.....	June 29, 1904.....	980 25
Pipe surface drains in Fuller st., between Dorchester ave. and Washington st.....	John H. Crane.....	June 29, 1904.....	1,383 00
Pipe sewer and drain in Montello st., between Belgrade and Colberg aves.....	William L. Dolan.....	June 30, 1904.....	1,993 85
Pipe sewer in Richview st., between Hillsdale and Parkview sts.....	George J. Regan.....	July 1, 1904.....	916 00
Pipe sewer in Englewood st., between Hillsdale and Parkview sts.....	George J. Regan.....	July 1, 1904.....	755 00
Pipe sewers and drains in Public alley No. 303, from Pinckney st. southerly.....	John E. Burns & Co.....	July 1, 1904.....	377 00
Pipe sewer in Hillsdale st., from Adams st. 442 feet northerly.....	Thomas H. Connolly.....	July 1, 1904.....	1,065 50
Pipe sewer in Dorchester st., between West Eighth st. and Dorchester ave.....	William J. Rafferty.....	July 2, 1904.....	1,699 00
Pipe sewer and drain in Abbot st., from Willow st. 190 feet easterly.....	James E. Coyne.....	July 8, 1904.....	535 50
Pipe drains in Front st., between Warren ave. and Austin st.....	P. Brennan & Co.....	July 25, 1904.....	1,976 25
Pipe sewer in Flint st., between Norfolk and Astoria sts.....	Jeremiah Bradley.....	July 30, 1904.....	908 50
Pipe sewers and drains in Hammond st., bet. Tremont and Sussex sts....	Thomas H. Connolly.....	August 31, 1904.....	1,950 50
Pipe sewer and drains in East Canton st., between Albany st. and Harrison ave.....	Michael Leonard.....	September 6, 1904.....	1,778 50
Catch-basins and drains in Nonantum st., from Oak sq. to the Newton line.....	Thomas J. Young & Co.....	September 7, 1904.....	952 50
Pipe sewer in Hillsdale st., between Codman and Richview sts.....	George J. Regan.....	September 9, 1904.....	1,057 50
Pipe sewer in Kemp st., between Columbia road and Washington ave....	Stephen Shaugheessy.....	September 20, 1904....	1,582 50
Pipe sewer in Richmond st., between Dorchester ave. and Washington st.,	George J. Regan.....	December 30, 1904....	1,355 00
Bulkheads, wharf and sewerage works, Union Park st. overflow.....	Cabill Construction Company...	January 11, 1905.....	4,673 90

Street Construction under Chapter 323 of the Acts of 1891, or Special Acts or Amendments thereto.

Macadam Roads.

CONTRACT.	Awarded to	Dated	Cost of contract as per estimated quantities, not including materials furnished by the City.
Belgrade ave., from South st. to about 120 feet west of Newbury st.	Philip Doherty	April 25, 1904	\$5,000 10
Franklin st., from Cambridge st. to the Boston & Albany Railroad.	Michael J. Coyle	May 14, 1904.	750 00
Hyde Park ave., between Walk Hill st. and bridge over Stony brook ...	Thomas F. Minton.	May 12, 1904.	10,415 50
Belgrade ave., 120 feet west of Newburg st. to Anawan ave.	Philip Doherty	June 6, 1904.	4,473 40
Hyde Park ave., from bridge over Stony brook to about 257 feet north of Ashland st.	Thomas F. Minton.	July 7, 1904.	16,513 50

Telford-Macadam Roads.

Bennington st., between Prescott and Bremen sts.	James Doherty	May 12, 1904.	\$6,863 40
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1 Bitulithic Pavement.

CONTRACT.	Awarded to	Dated	Price.
Smith st., between St., Alphonsus and Phillips sts.	Warren Brothers Company.	June 10, 1904.	\$5,206 40
Ashburton place, between Bowdoin and Somerset sts.	Warren Brothers Company.	July 2, 1904.	2,750 00
Emerald st., between Dover and Castle sts.	Warren Brothers Company.	July 2, 1904.	8,600 00
West Newton st., between Tremont st. and Columbus ave.	Warren Brothers Company.	July 23, 1904.	11,000 00
Roxbury st., from Shawmut ave. across Kent st.	Warren Brothers Company.	August 24, 1904.	8,200 00
Boylston st., between Dartmouth st. and bridge over the Boston & Albany Railroad.	Warren Brothers Company.	August 31, 1904.	34,362 00

¹These streets are guaranteed by a surety company bond for ten (10) years from date of completion.

Atlantic Avenue Reconstruction.

CONTRACT.	Awarded to	Dated	Price.
Atlantic ave., between Broad st. and Eastern ave., Section 1.....	Daniel J. Kiley	June 2, 1904.....	\$14,485 05
Atlantic ave., between Broad st. and Eastern ave., Section 2.....	Patrick McGovern.....	June 2, 1904.....	14,077 01
Atlantic ave., between Broad st. and Eastern ave., Section 3.....	Metropolitan Contracting Co.....	June 2, 1904	15,424 25
<i>Retaining Walls.</i>			
Retaining wall and fence, Byron st. near Saratoga st.	M. F. Culbert & Co.....	June 23, 1904	\$1,080 00
<i>Pile-driving for Sewers.</i>			
Furnishing and driving spruce piles for sewer in Otter, Back and Hereford sts.	John T. Scully & Brother.....	February 16, 1904.....	\$4,486 25
Furnishing and driving spruce piles for sewer in Hampshire st.....	George H. Cavanagh	May 12, 1904	1,181 00
Furnishing and driving spruce piles for sewer in A st.....	John T. Scully & Brother	October 19, 1904	2,913 40
Furnishing and driving spruce piles for sewerage works for Maywoods brook in Ruggles st	John P. Cavanagh.....	October 20, 1904	5,295 94
<i>Moon Island Construction, Etc.</i>			
Furnishing and install electric plant, pumping station, Calf Pasture.....	Cottle & Murphy.....	January 20, 1904.....	Actual reasonable cost, plus 15 per cent.
Furnishing and erecting engines and dynamos, pumping station, Calf Pasture.....	Ridgway Dynamo and Engine Co.....	January 30, 1904.....	\$3,155 00
Two (2) electric generators, pumping station, Calf Pasture.....	Bullock Electric Manufacturing Co.....	February 20, 1904.....	2,480 00
Boiler setting, pumping station, Calf Pasture.....	F. J. Linehan & Co.....	April 2, 1904	1,565 00
Furnishing sluice gates, pumping station, Calf Pasture.....	Coffin Valve Co.....	May 16, 1904.....	16,000 00

Stony Brook, Back Bay Fens, Construction.

CONTRACT.	Awarded to	Dated	Price.
Furnishing steel I-beams, Stony brook, Back Bay Fens, Section 2.....	Concrete Steel Engineering Co..	April 16, 1904.....	\$0.06½ per pound, with a five (5) year guarantee.
Furnishing spiral, riveted steel pipe, Stony brook, Back Bay Fens.....	The F. W. Webb Mfg. Co.....	April 21, 1904.....	12 inch W. G. 14, \$0.95½ per lin. ft. 12 inch W. G. 16, 0.79½ per lin. ft.
Cleansing ponds, Stony brook, Back Bay Fens.....	Simon J. Donovan.....	April 26, 1904.....	Actual reasonable cost, plus 15 per cent.
Furnishing engine and plates, Stony brook, Back Bay Fens..	The F. W. Webb Mfg. Co.....	May 7, 1904.....	\$1,850 00.
Furnishing Thatcher bars, Stony brook, Back Bay Fens, Section 6.....	Metropolitan Contracting Co....	May 16, 1904.....	0.06½ per pound, 5 year guarantee.
Furnishing two (2) portable boilers, Stony brook, Back Bay Fens.....	F. W. Webb Mfg. Co.....	May 24, 1904.....	2,294 00.
Furnishing and installing seven (7) sluice gates, Stony brook, Back Bay Fens.....	Coffin Valve Co.....	June 15, 1904.....	23,975 00.
Building gatehouses, connections and forebays, Stony brook, Back Bay Fens.....	John B. Graham.....	June 29, 1904.....	Actual reasonable cost, plus 15 per cent.

Bridges, Abutments and Superstructures.

Superstructure of Gainsborough-st. foot-bridge.....	Eastern Bridge and Structural Company.....	March 26, 1904.....	\$2,700 00
Superstructure of Harvard-st. bridge.....	Eastern Bridge and Structural Company.....	July 21, 1904.....	4,075 00
Abutments for Norfolk-st. bridge, over the New York, New Haven & Hartford Railroad.....	Metropolitan Contracting Company.....	July 29, 1904.....	27,338 00
Abutments for Harvard-st. bridge, over the New York, New Haven & Hartford Railroad.....	Metropolitan Contracting Company.....	July 29, 1904.....	13,578 00
Superstructure of Norfolk-st. bridge.....	The Boston Bridge Works.....	October 18, 1904.....	11,996 00

Miscellaneous Agreements.

CONTRACT.	Awarded to	Dated	Price.
Garbage disposal station, Calf Pasture, Dorchester.....	New England Sanitary Product Co.....	February 8, 1898.....	\$47,400 per year for 10 years.
Agreement to keep the sewer at Moon Island free from grease.....	W. J. Tavender.....	August 10, 1898, for 10 years.....	All grease and other materials removed to become the property of said Tavender.
Refuse disposal station, Atlantic ave.....	City Refuse Utilization Co.....	September 10, 1898....	\$5,500 per year for 10 years.
Disposal of refuse wastes in the Brighton District.....	The City Waste Disposal Co....	December 13, 1899....	500 per year for 10 years.
Removing dead animals from public streets and places.....	The N. Ward Co.....	November 7, 1901, for 10 years.....	No charge to city.
Four (4) weighing machines at ferry head houses.....	The National Automatic Weighing Machine Co.....	January 30, 1904.....	\$250 paid to the city.
Iron railing for the retaining walls on Columbia road at Mt. Vernon and Shoreham sts.....	W. A. Snow & Co.....	May 23, 1904.....	987 00
Excavating and removing bodies from the Tollgate Cemetery, Hyde Park ave.....	H. P. Nawn.....	May 31, 1904.....	1,100 00
Permission to cross tracks of the Boston, Revere Beach & Lynn Railroad for the purpose of constructing the East Boston low level sewer.....	Boston, Revere Beach & Lynn Railroad Co.....	June 6, 1904.....	
Permission to remove irons, sheathings and walls on L-st. bridge.....	William L. Miller.....	June 15, 1904.....	Mr. Miller filed a bond for \$1,500 guaranteeing to restore bridge to the satisfaction of the superintendent.
Agreement to pass and repass with men and teams across the tracks of the Grand Junction Branch of the Boston & Albany Railroad in order to construct the Addison-st. tunnel.....	The New York Central & Hudson River Railroad Co.....	June 21, 1904.....	
Agreement with relation to constructing the Harvard and Norfolk st. and Geneva ave. bridges.....	The New York New Haven & Hartford Railroad Co.....	July 14, 1904.....	City to pay the railroad \$16,000 on Geneva ave. Railroad to pay City \$16,700 on Harvard-st. and \$19,000 on Norwalk-st. bridges.
Lengthening and adjusting draw on Congress-st. bridge.....	Seth Perkins.....	July 20, 1904.....	\$2,000 00

Street Mileage.

The following table shows the length of public highways and character of the pavements, February 1, 1905:

DISTRICTS.	Asphalt.	Granite Block.	Wooden Block.	Plank on Bridges.	Brick.	Cobble.	Bitulithic.	Macadam.	Gravel.	Not Graded.	Totals.
Year 1903 report....	20.33	92.81	0.91	2.23	0.38	0.52	2.16	317.75	57.52	5.78	500.39
February 1, 1905.											
City Proper.....	16.27	44.06	0.74	0.70	0.34	0.15	2.02	27.43	0.11	0.79	92.61
Charlestown.....	0.30	10.91	.....	0.22	.....	0.01	.....	12.03	0.02	.....	23.49
East Boston	0.05	5.55	.....	0.19	.....	0.14	0.03	19.44	2.48	0.26	28.14
South Boston.....	1.69	16.28	.....	0.33	.....	.....	0.34	21.11	1.63	3.40	44.78
Roxbury.....	2.40	12.38	0.17	0.08	.....	.....	0.77	64.43	3.88	0.40	84.51
West Roxbury.....	.....	0.61	.....	0.09	.....	.....	.....	74.17	5.79	0.76	81.42
Dorchester .....	.....	5.83	.....	0.23	0.04	.....	.....	87.60	11.55	0.76	106.01
Brighton.....	.....	.....	.....	0.26	.....	.....	.....	27.79	13.08	0.11	41.94
Total.....	*20.71	†95.62	0.91	2.10	0.38	0.30	3.16	334.00	38.54	6.48	502.20

NOTE.—The above districts refer to areas enclosed by the original boundary lines.

* Of this amount 0.22 miles = asphalt blocks.

† Of this amount 15.43 miles = granite block paving on concrete base.

4.71 miles of public alleys, chapter 298, Acts of 1898, included in this table.

In addition to this table there are 0.85 miles accepted foot passageways.

Total length of public streets, 502.20 miles.

There have been laid out and accepted by the Street Commissioners during the year 0.63 linear miles of public streets; corrections to previous measurements on account of revision and other causes show an increase of 1.18 miles, making a total net increase of 1.81 miles.

The rate of increase from year to year is shown in the following table:

1859.....111.50 miles.	1882.....359.85 miles.	1894.....447.65 miles.
1871.....201.32 “	1883.....367.99 “	1895.....452.12 “
1872.....207.40 “	1884.....374.10 “	1896.....456.11 “
1873.....209.24 “	1885.....379.60 “	1897.....459.12 “
1874.....313.90 “	1886.....383.55 “	1898.....471.19 “
1875.....318.58 “	1887.....390.30 “	1899.....479.47 “
1876.....327.50 “	1888.....392.72 “	1900.....489.55 “
1877.....333.20 “	1889.....397.84 “	1901.....491.85 “
1878.....340.39 “	1890.....404.60 “	1902.....496.90 “
1879.....345.19 “	1891.....409.60 “	1903.....499.85 “
1880.....350.54 “	1892.....434.59 “	1904.....500.39 “
1881.....355.50 “	1893.....443.34 “	1905... 502.20 “

Area of Pavements.
The following Table shows the Area of Pavements in Square Yards by Districts.

DISTRICTS.	Asphalt.	Granite Block.	Wooden Block.	Plank on Bridges.	Brick.	Cobble.	Bitulithic.	Macadam.	Gravel.	Not Graded.	Totals.
February 1, 1903.....	329,003	2,042,384	23,653	48,371	3,670	6,830	41,718	5,820,269	898,988	200,964	9,424,850
City Proper.....	254,474	964,972	20,013	15,382	3,177	1,403	41,409	576,556	1,449	18,494	1,897,329
Charlestown.....	4,810	253,893	.....	5,130	.....	40	.....	176,405	275	.....	440,553
East Boston.....	600	119,022	.....	2,763	.....	897	620	403,615	46,317	14,295	588,129
South Boston.....	20,900	360,232	.....	7,318	.....	.....	3,806	388,711	39,035	114,969	929,971
Roxbury.....	54,351	275,752	3,640	2,205	.....	.....	14,079	1,111,428	54,822	9,172	1,521,449
West Roxbury.....	.....	13,723	.....	1,763	.....	.....	.....	1,211,914	90,858	54,588	1,372,786
Dorchester.....	.....	120,660	.....	4,758	493	.....	.....	1,548,395	181,893	36,905	1,893,104
Brighton.....	130	.....	.....	4,094	.....	.....	.....	665,236	190,342	4,232	864,034
Totals.....	* 335,265	† 2,108,254	23,653	43,353	3,670	2,340	59,914	6,077,260	604,991	252,655	9,511,355

NOTE.—The above districts refer to areas enclosed by the original boundary lines.

* Of this amount 2,537 square yards = asphalt blocks.

† Of this amount 338,044 square yards = granite block paving on concrete base.

24,341 square yards of public alleys laid out under chapter 298, Acts of 1898, included in this table.
 In addition to this table there are 4,390 square yards accepted foot passageways.

CENTRAL OFFICE DIVISION.

EXPENSES OF THE CENTRAL OFFICE.

For the current expenses of the Central Office the City Council appropriated the sum of twenty thousand dollars (\$20,000), to which was transferred from "Cambridge and Boston Bridges" the sum of eight hundred fifty-three dollars and twenty-one cents (\$853.21), making a total appropriation of twenty thousand eight hundred and fifty-three dollars and twenty-one cents (\$20,853.21), which was expended as follows:

Salaries	\$17,535 00
General office expenditures	3,318 21
	<hr/>
Total	<u>\$20,853 21</u>

Respectfully submitted,

JAMES DONOVAN,
Superintendent of Streets.

PART II.

APPENDICES.

PAGES I TO 157.

APPENDIX A.

REPORT OF THE DEPUTY SUPERINTENDENT OF THE BRIDGE DIVISION.

926, 927, 928 TREMONT BUILDING,
BOSTON, February 1, 1905.

HON. JAMES DONOVAN,

Superintendent of Streets, Boston :

DEAR SIR, — I respectfully submit herewith the annual report of the expenditures, income, and operations of the Bridge Division of the Street Department for the financial year ending January 31, 1905.

There are in the City of Boston 154 bridges, not including culverts. Eight of these, namely Harvard, Craigie's, West Boston, Prison Point, Cambridge, Essex street, Western avenue to Cambridge, and North Harvard street, all connecting Boston and Cambridge, are in charge of two commissioners, one of whom is appointed by the Mayor of the City of Boston and the other by the Mayor of the City of Cambridge.

One hundred and fourteen bridges are supported wholly or in part by the City of Boston, 28 of these being tide-water bridges, provided with a draw.

Forty bridges are supported wholly by railroad corporations. There are 13 important tide-water bridges ; namely, Mt. Washington avenue, operated by hand power ; Malden, Charlestown, Summer street, Chelsea North, Dover street, Dorchester avenue (formerly Federal street), and Meridian street, operated by electricity ; Warren, Broadway, Congress street, L street, and Chelsea South, operated by steam power.

The force employed on the tide-water bridges work on an 8-hour basis, which necessitates the employment of 9 men on each of 12 bridges, and 12 men on the Charlestown bridge, making a total force of 120 men employed on the 13 principal drawbridges.

Repairs have been made on the different bridges at various times ; the operating machinery on the drawbridges has been frequently inspected and such repairs made as were

needed, and the surfaces and structures of the different inland bridges have received attention, from time to time, as the necessity for same arose, and all defects promptly and properly remedied.

On December 22, 1904, the Shawmut-avenue bridge, for which an appropriation of \$28,000 was made by the city government, was opened to public travel.

During the month of May, 1904, the Huntington-avenue bridge, over the Boston & Albany Railroad, was opened for repairs, and an examination of the bridge was made by the Engineer's Department. The bridge was found to be in a very bad condition. It was scraped and painted, and a new deck and sheathing put in, for the time being.

From the examination above mentioned, it was demonstrated that a new bridge must be built to replace the present structure as soon as possible. Therefore I would respectfully recommend that a special appropriation be provided for the construction of said bridge, in the interest of public safety.

Respectfully submitted,

J. P. LOMASNEY,

Deputy Superintendent.

OBJECT OF EXPENDITURES.

ADMINISTRATION.

Office expenses :

Printing and stationery . . .	\$1,110 68	
Sundry office expenses . . .	450 36	
		<hr/>
		\$1,561 04
Salaries of deputy superintendent and clerical, force		6,729 27
Salaries of supervisors		3,609 32
Telephones, office, yards, and deputy superin- tendent's house		204 17
		<hr/>
Amount expended, administration	\$12,103 80	

MAINTENANCE EXPENDITURES.

Administration	\$12,103 80
On tide-water bridges	135,234 67
On inland bridges	17,252 68
North yard and stable	10,175 03
South yard and stable	10,503 66
	<hr/>
Total	\$185,269 84

FINANCIAL STATEMENT.

MAINTENANCE APPROPRIATION.

Appropriation 1904-05	\$185,000 00
Received from Boston and Albany Railroad Com- pany for work done	86 23
Received from Boston Elevated Railway Com- pany for work done	183 81
Total	<u>\$185,270 04</u>
Amount of expenditures from February 1, 1904, to January 31, 1905	\$185,269 84
Balance	20
Total	<u>\$185,270 04</u>

SPECIAL APPROPRIATIONS.

IN CHARGE OF BRIDGE DIVISION.

Congress-street Bridge, Repairs.

Labor	\$117 88
Material	244 21
Amount expended to January 31, 1905 .	\$362 09
Balance	613 76
Balance of appropriation, February 1, 1904 .	<u>\$975 85</u>

Construction of Piers, Bridge Division.

Labor and material:	
Broadway bridge	\$101 50
Chelsea (south)	98 53
Dorchester avenue (formerly Federal street)	198 25
Dover street	66 35
L street	75 00
Summer street	25 75
Warren	131 50
Amount expended to January 31, 1905 .	\$696 88
Balance	882 60
Balance of appropriation, February 1, 1904 .	<u>\$1,579 48</u>

Electrical Installation and Construction, Bridge Division.

Labor and material :

Charlestown bridge	\$220 00
Meridian-street bridge	610 00

Amount expended to January 31, 1905	\$830 00
Balance	101 17

Balance of appropriation, February 1, 1904	<u>\$931 17</u>
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SPECIAL APPROPRIATIONS IN CHARGE OF BRIDGE DIVISION.

NAME OF APPROPRIATION.	Appropriation and Balances.	Expended Feb. 1, 1904, to Jan. 31, 1905.	Balance on hand Jan. 31, 1905.
Congress-street bridge, repairs.....	\$975 85	\$362 09	\$613 76
Construction of piers, Bridge Division	1,579 48	696 88	882 60
Electrical installation and construction, Bridge Division.....	931 17	830 00	101 17
New trucks, Bridge Division.....	1,100 00	.....	1,100 00
Totals.....	\$4,586 50	\$1,888 97	\$2,697 53

Amount of expenditures February 1, 1904, to January 31, 1905	\$1,888 97
Balances	2,697 53

Amount of appropriations	<u>\$4,586 50</u>
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Amount expended and charged maintenance appropriation	\$185,269 84
Amount expended and charged to Bridge Division specials	1,888 97
Grand total of expenditures February 1, 1904, to January 31, 1905	<u>\$187,158 81</u>

INCOME.

The amount of bills deposited with the City Collector during the year was \$3,883.99, and the amount received by the City Collector on account of the Bridge Division was \$447.72.

TABLE SHOWING THE EXPENDITURES ON THE TIDE-WATER BRIDGES, FEBRUARY 1, 1904, TO JANUARY 31, 1905.

NAME OF BRIDGE.	Repairs. Labor and Material.	Regular Expenses. Salaries, Fuel and Supplies.	Totals.
Broadway.....	\$1,417 10	\$7,700 63	\$9,117 73
Charlestown	2,580 91	10,772 83	13,353 74
Chelsea (north).....	880 86	7,980 07	8,860 93
Chelsea (south).....	2,089 25	8,333 78	10,423 03
Chelsea street.....	540 47	316 07	856 54
Commercial Point.....	32 16	50 00	82 16
Congress street.....	1,688 87	7,328 40	9,017 27
Dover street.....	971 73	7,910 38	8,882 11
Dorchester avenue (formerly Federal street).....	2,941 21	8,328 53	11,269 74
Granite	31 60	239 20	270 80
L street.....	1,358 43	8,087 91	9,446 34
Malden.....	532 86	7,960 59	8,493 45
Meridian street.....	1,284 29	8,056 69	9,340 98
Mt. Washington avenue.....	146 43	8,609 56	8,755 99
Neponset.....	347 24	398 84	746 08
North Beacon street.....	365 71	155 37	521 08
Summer street.....	1,340 91	9,574 62	10,915 53
Warren.....	2,192 53	8,843 65	11,036 18
Western avenue to Watertown...	150 57	155 38	305 95
Winthrop.....	290 14	100 00	390 14
Sundry expenditures.....	385 45	2,138 45	2,523 90
Public landings.....	.....	625 00	625 00
Totals.....	\$21,568 72	\$113,665 95	\$135,234 67

TABLE SHOWING THE EXPENDITURES ON THE INLAND BRIDGES
FROM FEBRUARY 1, 1904, TO JANUARY 31, 1905.

NAME OF BRIDGE.	Repairs. Labor and Material.
Albany street.....	\$172 45
Allston.....	181 61
Ashland street (culvert).....	4 00
Ashmont.....	13 50
Baker street.....	222 15
Berkeley street (over B. & A. R.R.).....	21 54
Blakemore street.....	135 25
Bolton street.....	29 98
Boston street.....	71 17
Boylston street (over B. & A. R.R.).....	447 58
Broadway (over B. & A. R.R.).....	307 47
Brookline avenue (over B. & A. R.R.).....	27 00
Byron street.....	418 69
Cambridge street (over B. & M. R.R.).....	15 00
Central avenue.....	4 00
Columbus avenue.....	210 51
Cottage street.....	793 29
Dartmouth street.....	224 08
Dorchester avenue (over N. Y., N. H. & H. R.R.).....	78 20
Everett street.....	62 86
Ferdinand street.....	125 56
Florence street.....	6 00
Gold street.....	45 02
Harvard street.....	6 50
Huntington avenue.....	2,246 82
Irvington street.....	10 50
Keyes street.....	315 73
Linden Park street.....	90 94
Massachusetts avenue (over B. & A. R.R.).....	1,356 91
Massachusetts avenue (over N. Y., N. H. & H. R.R.)..	179 50
Perkins street.....	3 00
Shawmut avenue.....	81 48
Silver street.....	60 81
Southampton street (over N. Y., N. H. & H. R.R.).....	151 93
Southampton street (west of railroad).....	85 85
Spring street.....	1,690 50
West Fourth street.....	5,800 77
West Newton street.....	135 59
West Rutland square.....	123 25
Williams street.....	33 74
Sundry expenditures.....	1,261 95
Total.....	\$17,252 68

MAINTENANCE EXPENSES AT NORTH AND SOUTH YARDS.

District No. 1, Warren Bridge.

North Yard	\$5,839 49
North Stable	4,335 54
Total expended, North Yard and Stable .	<u>\$10,175 03</u>

District No. 2, 168-170 Broadway Extension.

South Yard	\$4,957 36
South Stable	5,546 30
Total expended, South Yard and Stable .	<u>\$10,503 66</u>

LIST OF BOSTON BRIDGES.

I. — BRIDGES WHOLLY MAINTAINED BY BOSTON.

[In the list those marked with an asterisk (*) are over navigable waters, and are each provided with a draw.]

In Charge of Bridge Division.

Allston, over Boston & Albany Railroad at Cambridge street, Brighton.
 Ashland street, over N. Y., N. H. & H. Railroad, Providence Division, West Roxbury.
 Athens street, over N. Y., N. H. & H. Railroad, Midland Division.
 Baker street, at Brook Farm, West Roxbury.
 Beacon street, over outlet to Back Bay Fens.
 Beacon street, over Boston & Albany Railroad.
 Bennington street, over Boston, Revere Beach & Lynn Railroad.
 Berkeley street, over Boston & Albany Railroad.
 Berwick park (foot-bridge), over N. Y., N. H. & H. Railroad, Providence Division.
 Blakemore street, over N. Y., N. H. & H. Railroad, Providence Division.
 Bolton street, over N. Y., N. H. & H. Railroad, Midland Division.
 Boylston street, over Boston & Albany Railroad.
 *Broadway, over Fort Point channel.
 Broadway, over Boston & Albany Railroad.
 Brookline avenue, over Boston & Albany Railroad.
 Byron street, over Boston, Revere Beach & Lynn Railroad.
 Charlesgate, over Ipswich street.
 *Charlestown, from Boston to Charlestown.

- *Chelsea [South] over south channel, Mystic river.
- *Chelsea street, from East Boston to Chelsea.
- Columbus avenue, over Boston & Albany Railroad.
- *Commercial Point, or Tenean, Dorchester.
- *Congress street, over Fort Point Channel.
- Cottage Farm, over Boston & Albany Railroad, at Commonwealth avenue.
- Cottage street (footbridge), over flats, East Boston.
- Dartmouth street, over Boston & Albany Railroad.
- *Dover street, over Fort Point channel.
- Elmwood street (private way), over Stony brook, Roxbury.
- *Dorchester avenue (formerly Federal street), over Fort Point channel.
- Ferdinand street, over Boston & Albany Railroad.
- Florence street, over Stony brook, West Roxbury.
- Gainsborough street (footbridge), over N. Y., N. H. & H. Railroad, Providence Division.
- Gold street (footbridge), over N. Y., N. H. & H. Railroad, Midland Division.
- Huntington avenue, over Boston & Albany Railroad.
- Hyde Park avenue, over Stony brook, West Roxbury.
- Ipswich street, over waterway.
- Irrington street (footbridge), over N. Y., N. H. & H. Railroad, Providence Division.
- Keyes street, over Stony brook, West Roxbury.
- *L street, over reserved channel at junction of Summer and L streets.
- Linden Park, over Stony brook, Roxbury.
- *Malden, from Charlestown to Everett.
- Massachusetts avenue, over Boston & Albany Railroad.
- Massachusetts avenue, over N. Y., N. H. & H. Railroad, Providence Division.
- *Meridian street, from East Boston to Chelsea.
- *Mount Washington avenue, over Fort Point channel.
- Shawmut avenue, over Boston & Albany and N.Y., N.H. & H. Railroad, Providence Division.
- Silver street, over N. Y., N. H. & H. Railroad, Midland Division.
- Southampton street, east of N. Y., N. H. & H. Railroad, Midland Division.
- Southampton street, west of N. Y., N. H. & H. Railroad, Midland Division.
- Summer street, over A street.
- Summer street, over B street.
- Summer street, over C street.
- *Summer street, over Fort Point channel.
- *Warren, from Boston to Charlestown.
- West Newton street, over N. Y., N. H. & H. Railroad, Providence Division.
- West Rutland square (footbridge), over N. Y., N. H. & H. Railroad, Providence Division.
- Williams street, over Stony brook, West Roxbury.
- Winthrop, from Breed's Island to Winthrop.

In Charge of Park Department.

Agassiz, in Fens.
 Audubon, in Riverway, over Boston & Albany Railroad.
 Boylston, in Fens, over waterway.
 Bridle-path, in Riverway, over Muddy river.
 * Castle Island, in Marine Park, South Boston to Castle Island.
 Chapel Arch, in Riverway.
 Charlesgate, in Fens, over Boston & Albany Railroad.
 Commonwealth avenue, in Fens, over waterway.
 Ellicot Arch, in Franklin Park.
 Fen, in Fens.
 Forest Hills, in Franklin Park.
 Leverett Pond (foot), in Leverett Park.
 Neptune, in Wood Island Park, over Boston, Revere Beach & Lynn Railroad.
 Overlook Arch, in Franklin Park.
 Railroad Viaduct, in Arborway.
 Scarboro', in Franklin Park.
 Scarboro' pond (foot), in Franklin Park.
 Stony Brook, in Arborway.
 Stony Brook, in Fens.
 Wood Island (foot), in Wood Island Park.

In Charge of Public Grounds Department.

Public Garden (foot-bridge).

II. — BRIDGES OF WHICH BOSTON MAINTAINS THE PART WITHIN ITS LIMITS.

In Charge of Bridge Division.

Central avenue, from Dorchester to Milton.
 * Chelsea [North], from Charlestown to Chelsea.
 * Granite, from Dorchester to Milton.
 Mattapan, from Dorchester to Milton.
 Milton, from Dorchester to Milton.
 * Neponset, from Dorchester to Quincy.
 * North Beacon street, from Brighton to Watertown.
 Spring street, from West Roxbury to Dedham.
 * Western avenue, from Brighton to Watertown.

In Charge of Park Department.

Bellevue, in the Riverway, over Muddy river.
 Brookline avenue, in the Riverway, over Muddy river.
 Chapel, in the Riverway, over Muddy river.
 Longwood, in the Riverway, over Muddy river.
 Tremont street, in the Riverway, over Muddy river.

III. — BRIDGES OF WHICH BOSTON PAYS A PART OF THE COST OF MAINTENANCE.

In Charge of Bridge Division.

Albany street, over Boston & Albany Railroad.

Ashmont, junction Dorchester avenue and Talbot avenue, over N. Y., N. H. & H. Railroad, Plymouth Division (75 feet south of northerly end).

Dorchester street, over N. Y., N. H. & H. Railroad, Plymouth Division.

Harvard street, over N. Y., N. H. & H. Railroad, Midland Division.

In Charge of Commissioners of Cambridge Bridges.

* Cambridge street, from Brighton to Cambridge.

* Craigie's, from Boston to Cambridge.

* Essex street, from Brighton to Cambridge.

* Harvard, from Boston to Cambridge.

* North Harvard street, from Brighton to Cambridge.

* Prison Point, from Charlestown to Cambridge.

* West Boston, from Boston to Cambridge.

* Western avenue, from Brighton to Cambridge.

IV. — BRIDGES OF WHICH BOSTON MAINTAINS THE WEARING SURFACE.

In Charge of Bridge Division.

Boston street, over N. Y., N. H. & H. Railroad, Plymouth Division.

Cambridge street, over Boston & Maine Railroad.

Chelsea bridge, over Boston & Maine Railroad.

Dorchester avenue, over N. Y., N. H. & H. Railroad, Plymouth Division.

Everett street, over Boston & Albany Railroad, Brighton.

Perkins street (foot-bridge), over Boston & Maine Railroad.

Summer street, over N. Y., N. H. & H. Railroad, Midland Division.

Southampton street, over N. Y., N. H. & H. Railroad, Plymouth Division.

West Fourth street, over N. Y., N. H. & H. Railroad, Plymouth Division.

V. — BRIDGES MAINTAINED BY RAILROAD CORPORATIONS.

1st. — Boston & Albany Railroad.

Harrison avenue.

Market street, Brighton.

Tremont street.

Washington street.

2d. — Boston & Maine and Boston & Albany Railroads.

Main street.

Mystic avenue.

3d. — Boston & Maine Railroad, Eastern Division.

Wauwatosa avenue, East Boston.

4th. — Boston, Revere Beach and Lynn Railroad.

Everett street.

5th. — New York, New Haven & Hartford Railroad, Midland Division.

Dorchester avenue.

Morton street, Dorchester.

Norfolk street, Dorchester [North].

Norfolk street, Dorchester [South].

Washington street, Dorchester.

West Broadway.

West Fifth street.

West Fourth street.

West Second street.

West Sixth street.

West Third street.

6th. — New York, New Haven & Hartford Railroad, Plymouth Division.

Adams street.

Freeport street.

Medway street.

Savin Hill avenue.

7th. — New York, New Haven & Hartford Railroad, Providence Division.

Albany street (new part).

Beech street, West Roxbury.

Bellevue street, West Roxbury.

Berkeley street (new part).

Broadway (new part).

Canterbury street, West Roxbury.

Castle street.

Centre and Mt. Vernon streets, West Roxbury.

Chandler street.

Columbus avenue (new part).

Dartmouth street (new part).

Dudley avenue, West Roxbury.

Ferdinand street (new part).

Harrison avenue (new part).

Park street, West Roxbury.

Tremont street (new part).

Washington street (new part).

RECAPITULATION OF BRIDGES.

I. Number wholly maintained by Boston :		
In charge of Bridge Division	58	
In charge of Park Department	20	
In charge of Public Grounds Department	1	
	—	79
II. Number of which Boston maintains the part within its limits :		
In charge of Bridge Division	9	
In charge of Park Department	5	
	—	14
III. Number of which Boston pays a part of the cost of maintenance :		
In charge of Bridge Division	4	
In charge of Commissioners of Boston and Cambridge Bridges	8	
	—	12
IV. Number of which Boston maintains the wearing surface :		
In charge of Bridge Division	9	
V. Number maintained by railroad corporations :		
1. Boston & Albany	4	
2. Boston & Maine and Boston & Albany Railroads	2	
3. Boston & Maine, Eastern Division	1	
4. Boston, Revere Beach & Lynn	1	
5. New York, New Haven & Hartford, Midland Division	11	
6. New York, New Haven & Hartford, Plymouth Division	4	
7. New York, New Haven & Hartford, Providence Division	17	
	—	40
Total number		<u>154</u>

PUBLIC LANDING-PLACES.

The following public landing-places have been built by the city, and are maintained and controlled by the Bridge Division :

East Boston Public Landing. — Size, 18 by 30. Built in 1893. Moored at dock of the Atlantic Works. Dock and flats leased at \$250 per year.

Jeffries' Point, East Boston. — Size, 20 by 50. Moored from Fitzpatrick's Wharf; \$350 per year.

CABLE-HOUSES AND BOXES.

The following is a list of cable-houses and boxes on bridges in charge of this division :

New England Telephone and Telegraph Company :

- Chelsea [South] bridge, 1 house.
- Congress-street bridge, 2 houses.
- Dover-street bridge, 2 houses or boxes.
- Chelsea [North] bridge, 1 box.
- Chelsea-street bridge, 1 box.
- Malden bridge, 4 boxes.
- Meridian-street bridge, 2 boxes.
- Neponset bridge, 2 boxes on poles.
- Warren bridge, 2 boxes.

American Telephone and Telegraph Company :

- Dorchester-avenue (formerly Federal-street) bridge, 1 house.
- Mt. Washington-avenue bridge, 2 boxes.
- Neponset bridge, 1 box on pole.
- Summer-street bridge, 1 box.

Merchants' Telegraph Company :

- Congress-street bridge, 2 boxes.

Postal Telegraph Cable Company :

- Congress-street bridge, 2 houses.
- Malden bridge, 2 boxes.
- Warren bridge, 2 boxes.

Boston Electric Light Company :

- Congress-street bridge, 2 boxes.

Lynn & Boston Railroad Company :

- Chelsea [North] bridge, 4 boxes.
- Chelsea [South] bridge, 8 boxes.

Boston Elevated Railroad Company :

- Cambridge-street bridge, 1 house.
- Dover-street bridge, 1 house, 1 box.
- Dorchester-avenue (formerly Federal-street) bridge, 2 houses.
- Malden bridge, 2 houses.
- Warren bridge, 2 houses.

Boston Police Department :

- Chelsea [South] bridge, 1 box.
- Malden bridge, 2 boxes.

Boston Fire Department :

- Chelsea [North] bridge, 1 box.
- Dover-street bridge, 1 house, 1 box.
- Meridian-street bridge, 2 boxes.
- Warren bridge, 2 boxes.

LAND AND BUILDINGS IN CHARGE OF BRIDGE DIVISION.

Broadway Bridge. — Draw-house, engine-room, and storehouse.
Land, Broadway and Dorchester avenue, containing 5,516 feet,
on which is a brick stable and workshop.

Charlestown Bridge. — Draw-house, electrical power-room, and six storehouses.

Chelsea [North] Bridge. — Draw-house, storehouse and tool-house.

Chelsea [South] Bridge. — Draw-house, engine-house and tool-house.

Chelsea-street Bridge. — Tool-house.

Congress-street Bridge. — Draw-house, storehouse, tool-house and two shelter-houses.

Cottage-street (foot-bridge). — Watchman's house.

Dover-street Bridge. — Draw-house and store-room.

Dorchester-avenue (formerly Federal-street) Bridge. — Draw-house, tool-house, two motor-houses, one controller-house.

L-street Bridge. — Draw-house, engine-house.

Malden Bridge. — Draw-house and tool-house.

Meridian-street Bridge. — Draw-house, tool-house and store-house.

Mt. Washington-avenue Bridge. — Draw-house and tool-house.

Neponset Bridge. — Tool-house.

Summer-street Bridge. — Draw-house, controller-house, two shelter houses.

Warren Bridge. — Stable, draw-house, engine-house, boiler-house, tool-house.

Western-avenue Bridge to Watertown. — Tool-house.

List of Small Bridges or Culverts having Wooden Tops, which are Repaired by Bridge Division. — Walls Repaired and Openings Cleaned by Sewer Division.

LOCATION.	Span.	Height of Opening.	Length.	Side Walls.	Covering.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>		
Ashland street and Canterbury, near Calvary Cemetery, West Roxbury.....	7.6	5.5	75	Stone.	Wood.
Beech street, near Anawan avenue, at Central Station, West Roxbury.....	4.0	4.0	50	Stone.	Wood.
Cass street, near Spring-street Station, West Roxbury.....	7.0	3.0	21	Stone.	Wood.
Cohasset street, Roslindale.....	14.0	7.5	60	Stone.	Wood.
Gardner street, near Cow Island, West Roxbury.....	5.0	5.5	33	Wood.	Wood.
Jamaica street, Jamaica Plain.....	10.0	4.0	39	Stone.	Wood.
Park street, west of Dorchester avenue, Dorchester.....	5.0	3.7	50	Stone.	Wood.
Park street, west of New York, New Haven & Hartford Railroad, Dorchester...	8.5	5.0	50	Stone.	Wood.
Spring street, near Spring-street Station, West Roxbury.....	2.7	2.7	63	Stone.	Wood.
Summer street, near Spring-street Station, West Roxbury	4.0	4.5	40	Stone.	Wood.
Williams street, at Stony brook, West Roxbury.....	5.0	5.0	50	Wood	Wood.
Woodman street, Jamaica Plain.....	6.3	4.0	65	Stone.	Wood.

Table Showing Width of Bridges, Kind of Roadways, Sidewalks, etc., on Tide-water Bridges, 1904.

NAME OF BRIDGE.	Width of Bridge.	ROADWAY.		SIDEWALKS.		
		Width.	Kind of Roadway.	No.	Width.	Kind of Walks.
	<i>Ft. In.</i>	<i>Ft. In.</i>			<i>Ft. In.</i>	
Broadway.....	60 0	40 0	Plank.....	2	10 0	Coal-tar concrete.
Cambridge street.....	40 0	32 9	"	1	6 0	Plank.
Charlestown	100 0 { 127 9 122 0 127 9 }		Paved.....	2	10 0	Asphalt.
Chelsea, North.....	49 0	40 0	"	1	8 0	Coal-tar concrete and plank.
" South.....	50 3	41 2	"	1	8 0	Plank.
" street.....	30 0	23 2	Plank	1	6 0	"
Commercial point.....	{ about 34 0 }	{ about 27 0 }	"			
Congress street	60 0	44 0	Paved.....	2	8 0	Coal-tar concrete.
Craigie's	64 0	48 0	"	2	8 0	Brick.
Dover st. (over water)	60 0	40 0	"	2	10 0	Asphalt.
Essex street.....	31 0	22 8	Plank	1	7 6	Plank.
Dorchester ave. (formerly Federal st.)..	69 0	49 0	Paved.....	2	10 0	Asphalt.
Granite.....	30 2	24 4	Plank	1	5 0	Plank.
Harvard.....	69 4	51 0	Wook block..	2	9 2	Asphalt.
L street.....	60 0	44 0	Paved.....	2	8 0	"
Malden.....	{ 60 0 to 67 6 }	44 0	"	2	8 0	Composition.
Meridian street.....	50 0	36 0	"	2	7 0	Coal-tar concrete.
Mt. Washington ave..	61 0	39 6	"	2	10 9	" "
Neponset.....	30 0	23 10	Plank	1	5 5	Plank.
North Beacon street...	31 0	25 2	"	1	5 0	"
North Harvard street,	28 2	26 7	"			
Prison Point.....	50 0	36 0	{ Plank part Paved part }	2	7 0	Coal-tar concrete.
Summer street.....	100 0	76 0	" entire..	2	12 0	Asphalt.
Warren.....	80 0	60 0	Paved.....	2	10 0	Coal-tar concrete.
Western avenue to Cambridge.....	33 2	26 3	Plank	1	6 0	Plank.
Western avenue to Watertown.....	33 0	24 2	"	1	8 0	"
Winthrop.....	24 2	19 10	"	1	3 7	"
West Boston (temporary)	47 2	36 0	"	1	10 0	Brick.

Table Showing the Width of Openings for Vessels in all Bridges Provided with Draws in the City of Boston, 1904.

NAME OF BRIDGE.	Location.	Number of Openings.	Width.
Boston & Maine R.R., Eastern Division	Boston to Charlestown.....	1	39 feet 7 inches.
Boston & Maine R.R., Eastern Division	Over Miller's river.....	1	35 " 9 "
Boston & Maine R.R., Fitchburg Division	Boston to Charlestown.....	1	36 " 0 "
Boston & Maine R.R., Fitchburg Division (for teaming freight)..	" "	1	36 " 0 "
Boston & Maine R.R. (freight), Southern Division.....	Boston to East Cambridge,	1	40 " 2 "
Boston & Maine R.R. (passen- ger), Southern Division.....	" "	1	39 " 7 "
Boston & Maine R.R., Western Division	Boston to Charlestown.....	1	39 " 7 "
Boston & Maine R.R., Western Division	Over Miller's river.....	1	35 " 10 "
Broadway.....	Over Fort Point channel...	1	43 " 0 "
Cambridge street.....	Brighton to Cambridge.....	1	36 " 4 "
Charlestown (main channel).....	Boston to Charlestown.....	2	50 " 0 "
Charlestown (north channel)....	" "	50	" 0 "
Chelsea (south channel).....	Charlestown to Chelsea....	1	38 " 9 "
Chelsea (north channel).....	" "	1	60 " 0 "
Chelsea street (East Boston side),	East Boston to Chelsea....	2	36 " 0 "
Chelsea street (Chelsea side)....	" "	36	" 0 "
Commercial Point (or Tenean)...	Dorchester	1	24 " 2 "
Congress street (Boston side)....	Over Fort Point channel...	2	43 " 3 "
Congress st. (South Boston side)..	" " "	50	" 0 "
Craigle's	Boston to East Cambridge,	1	36 " 0 "
Dorchester avenue (formerly Federal street).....	Over Fort Point channel...	1	41 " 6 "
Dover street.....	" " "	1	37 " 0 "
Essex street.....	Brighton to Cambridge...	1	36 " 0 "
Grand Junction R.R.....	" "	1	36 " 0 "
Grand Junction R.R.....	East Boston to Chelsea....	1	49 " 2 "
Granite	Dorchester to Milton.....	1	36 " 0 "
Harvard (Boston side).....	Boston to Cambridge.....	2	36 " 6 "
Harvard (Cambridge side).....	" "	36	" 10 "
L street	Over Reserved channel, South Boston.....	1	39 " 9 "

Table showing Width of Openings, etc. — *Concluded.*

NAME OF BRIDGE.	Location.	Number of Openings.	Width.
Malden	Charlestown to Everett....	1	50 feet 0 inches.
Meridian st. (East Boston side)..	East Boston to Chelsea....	2	59 " 2 "
Meridian street (Chelsea side)...	" "	59	" 0 "
Mt. Washington avenue (Boston side).....	Over Fort Point channel...	2	42 " 2 "
Mt. Washington avenue (South Boston side)	" " "	52	" 0 "
Neponset.....	Dorchester to Quincy.....	2	36 " 0 "
New York, New Haven & Hart- ford R.R.....	Over South Bay.....	1	28 " 4 "
New York, New Haven & Hart- ford R.R., Y-connection.....	Over Fort Point channel...	1	41 " 10 "
New York, New Haven & Hart- ford R.R.	" " "	41	" 5 "
New York, New Haven & Hart- ford R.R.	Dorchester to Quincy.....	1	35 " 10 "
North Beacon street	Brighton to Watertown. .	1	30 " 0 "
North Harvard street.....	Brighton to Cambridge....	1	36 " 0 "
Prison Point.....	Charlestown to Cambridge,	1	36 " 0 "
Summer street.....	Over Fort Point channel...	1	50 " 0 "
Warren.....	Boston to Charlestown....	1	36 " 0 "
West Boston (temporary).....	Boston to Cambridge	1	36 " 0 "
Western avenue	Brighton to Cambridge....	1	36 " 0 "
Western avenue.....	Brighton to Watertown...	1	35 " 10 "

DRAWTENDERS' REPORTS.*

Giving Number of Vessels Passing Through the Drawbridges Controlled by the City of Boston from February 1, 1904, to January 31, 1905, Inclusive.

BRIDGE.	STEAMERS.			SAILING VESSELS.			TUGS.			ALL OTHERS.			TOTAL NUMBER OF VESSELS.			Total Number of Cargoes.	Total Number of Openings.
	By Day.	By Night.	Total.	By Day.	By Night.	Total.	By Day.	By Night.	Total.	By Day.	By Night.	Total.					
Broadway	4	.....	.....	992	171	1,163	3,440	431	3,871	1,521	211	1,732	5,953	813	6,766	1,424	2,515
Charlestown	298	23	321	540	190	730	3,046	712	3,758	1,736	403	2,139	5,826	1,305	6,631	1,322	1,718
Chelsea (North)	14	1	15	397	24	421	6,519	672	7,191	3,082	309	3,391	10,531	1,052	11,583	2,001	6,225
Chelsea (South)	5	.....	5	.....	.....	.....	4,186	298	4,484	2,744	173	2,917	7,341	496	7,837	1,787	4,266
Chelsea street .....	.....	.....	.....	.....	.....	.....	92	3	95	45	1	46	147	4	151	21	108
Commercial Point .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Congress street	56	5	61	1,145	171	1,316	5,434	672	6,106	1,999	256	2,255	8,634	1,104	9,738	1,636	606
Dover street .....	.....	.....	.....	925	135	1,060	2,948	360	3,308	1,186	151	1,337	5,059	646	5,705	1,175	2,959
Dorchester avenue (formerly Federal street) .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Granite .....	.....	.....	.....	990	191	1,181	3,507	503	4,010	1,526	216	1,742	6,023	910	6,933	1,434	4,013
L street .....	.....	.....	.....	26	.....	26	237	3	240	93	.....	93	356	3	359	55	204
Malden .....	.....	.....	.....	157	37	194	4,066	490	4,556	2,312	519	2,831	6,535	1,046	7,581	860	5,137
Meridian street .....	.....	.....	.....	127	18	145	1,202	111	1,313	745	97	842	2,074	228	2,302	441	1,209
Mt. Washington avenue	19	6	25	259	26	285	6,771	1,400	8,231	2,842	556	3,398	9,891	2,048	11,939	1,443	7,160
Neponset	51	4	55	1,044	161	1,205	4,673	583	5,256	1,788	274	2,062	7,556	1,022	8,578	1,679	2,210
North Beacon street .....	.....	.....	.....	25	1	26	228	10	238	90	4	94	343	15	358	55	101
Summer street	56	5	61	1,149	170	1,319	5,413	675	6,088	1,987	259	2,246	8,605	1,109	9,714	1,643	5,201
Warren	3	3	6	1,645	178	1,823	2,668	547	3,215	1,519	320	1,839	4,735	5,773	1,144	3,392	120
Western avenue to Watertown .....	.....	.....	.....	.....	.....	.....	142	.....	142	85	.....	85	227	.....	227	43	.....
Totals	506	49	555	8,958	1,511	10,469	54,572	7,530	62,102	25,300	3,749	29,049	89,336	12,839	102,175	18,163	47,634

* West Boston, Cambridge street, Essex street, North Harvard street, Western avenue to Cambridge, Prison Point, Craigie's and Harvard bridges are not included in this table, being in care of Commissioners representing the two cities (Boston and Cambridge) connected by these bridges.

DRAWTENDERS' REPORTS.*

Giving Number of Vessels Passing through Drawbridges Controlled by the City of Boston from February 1, 1900, to January 31, 1905, Inclusive.

BRIDGE.	STEAMERS.					SAILING VESSELS.					TUGS.					ALL OTHERS.					TOTAL NUMBER OF VESSELS.					Total.
	1900.	1901.	1902.	1903.	1904.	1900.	1901.	1902.	1903.	1904.	1900.	1901.	1902.	1903.	1904.	1900.	1901.	1902.	1903.	1904.	1900.	1901.	1902.	1903.	1904.	
	8	4	6	...	...	1,630	1,719	1,586	1,203	1,163	3,866	4,558	5,156	4,359	3,871	1,913	2,140	2,409	2,235	1,732	7,417	8,421	9,157	7,797	6,766	79,116
Broadway.....	53	6	...	...	...	1,567	1,474	1,265	1,083	730	4,546	4,571	3,907	4,209	3,758	2,333	2,578	1,907	2,192	2,139	8,539	8,629	7,079	7,486	6,631	76,728
Charles River.....	508	504	443	461	321	900	727	782	788	680	9,411	7,834	7,766	8,745	7,191	4,135	3,835	3,826	4,018	3,391	14,954	12,400	12,817	14,012	11,583	132,532
Chelsea (North).....	40	6	30	55	15	1,047	668	726	517	421	3,369	3,155	3,789	3,996	4,484	1,521	1,652	2,086	2,852	2,917	5,977	5,481	6,631	7,420	7,837	66,692
Chelsea (South).....	1	1	2	6	5	22	2	4	23	5	132	111	139	112	95	75	113	267	59	46	230	227	472	200	151	2,560
Congress street.....	91	112	73	58	61	1,916	1,979	1,866	1,442	1,316	7,233	8,129	7,868	6,984	6,106	3,089	3,275	3,333	2,820	2,255	12,859	13,495	13,160	11,304	9,738	120,112
Dover street.....	6	4	4	...	...	1,488	1,590	1,390	1,059	1,060	3,305	4,013	4,557	3,699	3,308	1,561	1,628	1,968	1,538	1,337	6,360	7,235	7,919	6,296	5,705	67,030
Dorchester avenue (formerly Federal street).....	10	10	6	...	...	1,659	1,765	1,559	1,208	1,181	4,033	4,887	5,338	4,564	4,010	1,875	2,049	2,302	2,201	1,742	7,577	8,721	9,205	7,973	6,933	80,808
Granite.....	...	...	...	...	...	28	36	33	32	26	235	259	166	225	240	92	102	66	90	93	355	397	265	348	359	3,448
L street.....	...	...	...	...	...	372	340	332	264	194	2,142	2,479	3,398	4,641	4,556	2,110	2,211	2,108	2,629	2,881	4,624	5,020	5,838	7,534	7,581	61,204
Malden.....	4	...	...	...	...	312	244	232	178	145	2,098	2,901	1,756	1,835	1,313	1,026	1,505	1,021	984	842	3,440	3,750	3,019	2,999	2,302	31,020
Meridian street.....	68	105	67	28	25	487	406	331	367	285	6,449	5,875	6,873	7,662	8,231	3,161	2,806	3,134	3,227	3,398	10,165	9,192	10,405	11,184	11,939	105,770
Mt. Wash. avenue.....	59	85	70	100	55	1,717	1,811	1,709	1,295	1,205	6,155	6,897	7,030	6,767	5,256	2,845	2,822	2,936	2,583	2,062	10,776	11,615	11,765	10,055	8,578	105,578
Neponset.....	...	...	...	...	...	26	50	49	38	26	214	270	164	234	298	128	110	53	93	94	368	430	266	365	358	3,574
No. Beacon street.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	42
Summer street.....	91	112	73	58	61	1,855	1,982	1,979	1,440	1,319	7,160	8,128	7,851	6,969	6,088	3,018	3,200	3,282	2,805	2,246	12,124	13,422	13,135	11,263	9,714	119,316
Warren.....	12	7	4	6	...	1,554	1,449	1,212	1,059	713	4,084	4,020	3,222	3,212	3,215	2,324	2,463	1,624	1,725	1,839	7,974	7,939	6,065	6,000	5,773	67,502
Warren avenue to Watertown.....	...	...	...	...	...	4	...	...	...	...	222	136	62	115	142	54	100	34	71	85	280	236	96	186	227	2,050
Totals.....	991	956	781	774	555	16,584	16,242	15,035	11,906	10,469	64,684	67,923	69,122	67,529	62,102	31,260	32,610	32,336	32,123	29,049	113,519	117,131	117,294	112,422	102,175	1,125,982

* West Boston, Cambridge street, Essex street, North Harvard street, Western avenue to Cambridge, Prison Point, Craigie's and Harvard bridges are not included in this table, being in care of Commissioners representing the two cities (Boston and Cambridge) connected by these bridges.

APPENDIX B.

REPORT OF THE DEPUTY SUPERINTENDENT OF
THE FERRY DIVISION.

NORTH FERRY, EAST BOSTON, February 1, 1905.

MR. JAMES DONOVAN,

Superintendent of Streets :

DEAR SIR, — I respectfully submit the annual report of the Ferry Division for the year ending January 31, 1905.

The past winter has been the most severe for many years, perhaps the worst since the ferries were established, particularly as to weather conditions. We had to contend with the highest and lowest tides occurring at a time when the harbor was packed with ice, thereby compelling the running of boats with the utmost care to avoid accidents. In this particular respect we were very fortunate, as no serious trouble occurred.

All the boats have been equipped with patent locks, sockets and connections to gates, which have eliminated the possibility of serious accidents to the ferries, for which the city has been liable in the past.

The side-wheel ferry-boat "Revere," built in 1875, had been so long in service that extraordinary repairs were strongly recommended and consequently carried into effect, with the result that this boat is now doing service at the South Ferry as third boat. With new ends and careful use the boat can be used for this purpose for several years, otherwise a new boat must be provided.

The coal-pocket at the North Ferry, East Boston side, is practically useless, as no coal can be stored there without grave danger of fire and great expense in handling. Practically all coal is now stored at the South Ferry, making it very inconvenient, and as the storage capacity at this dock is but two thousand (2,000) tons, we are in constant dread of a shortage during the winter months. A new pocket should be constructed at once to insure a winter's supply of coal, and a special appropriation for this purpose ought to be provided.

The old piers, which have been in use for many years, are a source of constant care and great expense to keep in safe

condition for foot and boat travel. Money should be provided from some source to reconstruct these piers, and at the same time the head-house at the South Ferry, Boston side, should be moved to the north side of the landing to conform to the three other landings. This would greatly facilitate travel at this ferry, and the cost could be included in the appropriation for piers.

The property in charge of this division is as follows :

South Ferry, East Boston Side. — Located at the termination of Lewis street, and covers an area of 58,725 square feet of land and water. On these premises are one head-house, with canopies ; one workshop for carpenters, machinists, and blacksmith, both of the above buildings being at present time in course of construction ; one storehouse and temporary waiting-room, one new, modern coal-pocket, three new piers which form the two slips, two drops and tanks, one new wharf and dock, where boats are laid when not in use or while undergoing repairs.

South Ferry, Boston Side. — Located at the termination of Eastern avenue, and covers an area of 38,135 square feet of land and water, on which are one head-house with canopies, one gate-room, three piers which form the two slips, and two drops and tanks.

North Ferry, Boston Side. — Located at the termination of Battery street, and covers an area of 45,000 square feet of land and water, on which are one head-house with canopies, one gate-room, three piers which form the two slips, and two drops and tanks.

North Ferry, East Boston Side. — Located at the termination of Border street, and covers an area of 62,138 square feet of land and water, on which are one head-house with canopies, one boiler and oil-room, one stable, one coal-shed, three piers, which form the two slips, and two drops and tanks.

The following steam ferry-boats are in commission :

Name.	When built.	Kind.	Length.
Revere.....	1875	Side-wheel,	148 ft.
D. D. Kelly.....	1879	"	148 "
Hugh O'Brien.....	1883	"	163 "
General Hancock.....	1887	"	148 "
Noddle Island.....	1899	Propeller.	164 " 3 in.
Gov. Russell.....	1900	"	164 " 3 "
General Sumner.....	1900	"	164 " 3 "

Respectfully submitted,

WM. J. DONOVAN,

Deputy Superintendent.

STREET DEPARTMENT, FERRY DIVISION.

CONSOLIDATED FINANCIAL STATEMENT FOR THE YEAR 1904-05.

1. Receipts.

Total cash receipts during the year . . .	\$176,151 20	
Cash withdrawn from tollmen's capital . . .	50 00	
Cash in hands of tollmen at beginning of year . . .	\$600 00	
Cash withdrawn from tollmen . . .	50 00	
	<u>550 00</u>	
Total . . .	\$176,751 20	
Cash paid over to City Collector . . .	\$176,198 95	
Rejected money received and destroyed . . .	2 25	
	<u>176,201 20</u>	
Balance of cash on hand at end of the year . . .		<u>\$550 00</u>

2. Appropriations and Expenditures.

Balance unexpended from previous years (loans) . . .	\$15 60	
Received from City Treasurer by transfer . . .	14,526 20	
Received from City Treasurer, annual appropriation for this division for 1904-5 . . .	243,600 00	
	<u>258,141 80</u>	
*Total appropriations of all kinds . . .	\$258,141 80	
*Total expenditures of all kinds . . .	258,126 20	
	<u>258,126 20</u>	
Balance unexpended (loans) . . .		<u>\$15 60</u>

3. Result of Operations for the Year.

Receipts for the year (net income) . . .	\$176,151 20	
Ordinary expenses . . .	\$258,126.20	
Extraordinary expenses (special appropriation) . . .		
Interest on ferry debts . . .	16,920 00	
Depreciation on boats . . .	15,122 86	
Decrease of stock of supplies . . .	5,100 77	
	<u>37,143 63</u>	
Net outgo for the year . . .		<u>295,269 83</u>
Net loss for year . . .		<u>\$119,118 63</u>

*Details of appropriations and expenditures given in Table 5.

4. Balance Sheet.

End of fiscal year January 31, 1905.

ASSETS.		LIABILITIES.	
AVAILABLE ASSETS:		CURRENT LIABILITIES:	
Cash on hand.....	\$550 00	None.	
Accounts receivable.....	12 50		
Inventory of supplies, etc., on hand.....	4,692 23		
Total Available Assets.....	\$5,254 73		
CONTINGENT ASSETS:		CONTINGENT LIABILITIES:	
City Treasury, balance of appropriations.....	15 60	Appropriations account.....	\$15 60
FIXED ASSETS:		FIXED LIABILITIES:	
Real estate and buildings*.....	† 577,400 00	Capital of the city invested in the ferries.....	3,571,933 54
Ferryboats †.....	236,924 79	Viz.: Total expenditures all kinds for 47 years, including interest on debts.....	\$9,608,646 48
Engines, boilers, machinery, tools, and heating apparatus.....	7,595 00	Less total receipts.....	6,036,712 94
Total Tangible Assets.....	\$827,190 12		
Avenues, etc., East Boston \$.....	315,815 68		
Deficiency, or loss of operation and maintenance of the ferries 47 years to date.....	2,428,943 34		
	\$3,571,949 14		\$3,571,949 14

* Original purchase of ferries.....\$278,375 00
 New buildings, drops, slips, etc., cost to date.... 458,032 10
 Land, Lincoln's Wharf, cost, 1887..... 5,562 52
 Land, Battery Wharf, cost, 1893..... 10,000 00

† Assessors' figures for 1901.

† Total cost to date, per ferry books..... 618,070 58
 Less boats sold, depreciated or destroyed..... 381,145 79
 \$236,924 79

\$ Cost (net) previous to 1870, per ferry books, viz.:
 "Expenditures for avenues",.....\$250,000 00
 "Expenditures for improvements",..... 65,815 68

\$315,815 68

These expenditures were practically subsidies to the East Boston Ferry Company by the city before the ferries were purchased by the latter, and should properly be added to the deficiency or loss.

5. Comparison of Receipts, Appropriations, and Expenditures for Five Years.

RECEIPTS.	1900-01.	1901-02.	1902-03.	1903-04.	1904-05.
From foot passengers (tollmen)	\$118,172 57	\$120,115 63	\$125,457 18	\$130,626 23	\$128,902 89
“ “ passes (office sales)	1,497 80	1,571 00	1,470 70	994 70	1,073 10
“ extra passengers on team (gatemmen)	2,725 46	2,338 99	2,165 31	1,734 32	1,610 29
“ team tickets (office sales)	320 00	334 00	547 50	1,113 00	1,065 00
“ strip team tickets (tollmen)	25,521 00	27,137 50	27,168 50	27,353 50	27,322 50
“ teams (gatemmen)	14,263 96	13,291 47	13,308 09	12,857 56	13,567 37
“ city collector for tickets .....	.....	.....	.....	1,367 50	438 00
“ free ferries, July 4 .....	.....	.....	.....	1 00	1 00
Total from rates	\$162,500 79	\$164,788 59	\$170,117 28	\$176,047 81	\$173,980 15
From rents (Sargent's Wharf and pedler's privileges)	2,578 34	2,540 00	2,477 50	656 50	1,324 50
“ old materials sold	176 75	179 77	46 45	72 00	166 25
“ other sources	375 50	372 50	551 50	732 00	680 30
Total ordinary receipts	\$165,631 38	\$167,880 86	\$173,192 73	\$177,508 31	\$176,151 20
From sales of boats	1,199 50	.....	.....	.....	.....
Total receipts	\$166,830 88	\$167,880 86	\$173,192 73	\$177,508 31	\$176,151 20
Less rejected money (counterfeit, etc.)	10 55	1 24	2 85	1 10	2 25
Total receipts turned over to city	\$166,820 33	\$167,879 62	\$173,189 88	*\$177,507 21	\$176,148 95
APPROPRIATIONS.					
Regular appropriations	\$237,000 00	\$250,600 00	\$220,000 00	\$220,000 00	\$243,600 00
Special appropriations:	.....	.....	.....	.....	.....
Ferry improvements .....	.....	.....	100,000 00	.....	.....
Total appropriations	\$237,000 00	\$250,600 00	\$320,000 00	\$220,000 00	\$243,600 00

* Less \$25 retained for addition to tollmen's working capital.

5, — Comparison of Receipts, etc. — *Concluded.*

RECEIPTS.		1900-01.	1901-02.	1902-03.	1903-04.	1904-05.
EXPENDITURES (ORDINARY).						
Office:						
Superintendent's salary.....		\$3,000 00	\$3,000 00	\$3,000 00	\$3,000 00	\$3,000 00
Clerks and cashier.....		4,154 69	4,200 00	4,100 30	4,189 00	4,087 50
Stationery.....		356 55	287 70	348 59	397 05	396 89
Printing.....		1,292 39	804 80	1,342 84	918 58	868 49
Telephones.....		295 59	336 61	265 88	217 30	382 52
* Keeping horse and repairing vehicle.....		218 68	315 47	947 90	675 93	662 56
Advertising, etc.....		60 96	.....	102 07	129 22	10 50
Examination of accounts, etc.....		.....	.....	469 00	.....	.....
Travelling expenses.....		43 00	63 00	70 00	.....	.....
Premiums, surety companies.....		156 00	114 50	115 00	107 50	97 50
Total office expenditures.....		\$9,577 86	\$9,122 08	\$10,761 58	\$9,634 58	\$9,506 96
Ferry-boats and landings:						
Employees.....		145,298 65	151,200 46	130,562 51	149,850 77	164,666 42
Fuel.....		41,499 46	40,249 21	47,301 50	61,042 76	35,701 13
Teaming, wheeling coal, etc.....		4,098 40	4,237 50	5,143 00	5,552 60	5,648 45
Oil, waste, and supplies.....		5,257 58	5,761 51	6,112 60	5,744 50	5,446 14
Tools, iron, and hardware.....		1,423 99	1,613 28	2,702 22	.....	.....
Gas.....		1,280 29	957 56	716 05	1,047 58	967 94
Electric light.....		6,156 49	7,160 98	6,749 35	7,611 62	7,176 04
Towing by horses.....		.....	.....	519 36	.....	418 25
" " electric power.....		605 00	600 00	600 00	600 00	354 50
Repairs of boats.....		8,445 60	16,331 98	6,164 08	6,949 43	15,299 12
" " buildings and drops.....		7,286 88	6,108 99	4,850 62	5,127 00	8,806 41

Furnishings, electric, etc	852 67	636 76	639 97	670 88	943 59
Damages.....	52 00	20 00	23 45	149 88	17 00
Rent Sargent's wharf	4,000 00	4,000 00	4,000 00	.....	.....
Other expenditures.....	1,165 04	753 75	842 00	553 63	175 25
Total from regular appropriations.....	\$236,999 91	\$248,754 06	\$227,688 29	\$254,535 23	\$258,126 20
EXPENDITURES FROM SPECIAL APPROPRIATIONS.					
New ferry landing.....	† 96,191 74	41,988 16	10,639 71	.....	.....
New ferry-boats.....	8,781 81	.....	.....	.....	.....
Ferry improvements.....	.....	.....	58,650 99	41,333 41	.....
Total expenditures, regular and special.....	\$341,973 46	\$290,742 22	\$296,978 99	\$295,868 64	\$258,126 20
Transfers { to treasury.....	09	.....	.....	.....	.....
to other departments.....	.....	4,959 87	.....	.....	.....
Total expenditures, including transfers.....	\$341,973 55	\$295,702 09	\$296,978 99	\$295,868 64	\$258,126 20
Balances in treasury unexpended:	.....	.....	.....	.....	.....
From ordinary appropriations.....	.....	.....	.....	.....	.....
From special appropriations.....	\$52,627 87	\$10,639 71	\$41,349 01	\$15 60	\$15 60

* Includes repair coal carts.

† Portion of \$500,000 loan authorized of which \$200,000 was transferred to Sewer Division.

6. Comparative Balance Sheets at the Close of each Year for Five Years.

	January 31, 1901.	January 31, 1902.	January 31, 1903.	January 31, 1904.	January 31, 1905.
<i>Assets.</i>					
Cash in hands of tollmen.	\$575 00	\$575 00	\$575 00	\$600 00	\$550 00
Accounts receivable.....			62 50		12 50
Fuel and supplies on hand.....	10,870 05	10,371 78	7,153 65	9,793 00	4,692 23
City Treasurer (balance of appropriations).....	52,627 87	10,639 71	41,349 01	15 60	15 60
Real estate and buildings (Assessors' valuations)	498,900 00	546,600 00	577,400 00	577,400 00	577,400 00
Ferry-boats (less depreciation).....	303,458 37	285,250 85	268,135 80	252,047 65	236,924 79
Machinery and tools.....	6,000 00	6,000 00	300 00	7,595 00	7,595 00
Total tangible assets...	\$872,431 29	\$859,437 34	\$894,975 96	\$847,451 25	\$827,190 12
Cost of avenues, etc., East Boston (previous to 1870)†.....	315,815 68	315,815 68	315,815 68	315,815 68	315,815 68
Deficiency of assets (loss)	1,927,086 05	2,034,374 44	2,168,337 23	2,309,834 96	2,428,943 34
Totals.....	\$3,115,333 02	\$3,209,627 46	\$3,379,128 87	\$3,473,101 89	\$3,571,949 14
<i>Liabilities.</i>					
Capital invested by City of Boston to date.....	\$3,062,705 15	\$3,198,987 75	\$3,337,779 86	\$3,473,086 29	\$3,571,933 54
Appropriations account (credit balances).....	52,627 87	10,639 71	41,349 01	15 60	15 60
Total liabilities.....	\$3,115,333 02	\$3,209,627 46	\$3,379,128 87	\$3,473,101 89	\$3,571,949 14

Details of Capital Invested by the City of Boston.

Total expenditures to date, per ferry books..	\$8,049,900 02	\$8,355,982 24	\$8,666,381 23	\$8,977,252 87	\$9,252,299 07
Interest on debts for the year (per City Auditor).....	15,340 00	13,420 00	15,003 00	16,920 00	16,920 00
Interest previous years, etc. (net debits per Auditor).....	279,148 85	279,148 85	279,148 85	279,148 85	279,148 85
Total expenditures...	*\$8,344,388 87	*\$8,648,551 09	*\$8,960,533 08	*\$9,273,321 72	*\$9,548,367 92
Deduct total receipts paid to Collector.....	*5,281,683 72	*5,449,563 34	*5,622,753 22	*5,800,235 43	*5,976,434 38
Excess of expenditure, viz., capital invested by city.....	\$3,062,705 15	\$3,198,987 75	\$3,337,779 86	\$3,473,086 29	\$3,571,933 54

* Auditor's figures for total expenditures and receipts are \$60,278.56 more than above, the difference (capital invested) being the same.

\$3,542.50 for additional interest, and \$33, discrepancy in total stated by ferry books, have also been included in these figures.

† See footnote, § under Table 4.

7. Total Expenditures Upon Ferries Since 1858-59.

Expenditure for avenues, paving, interest, etc., previous to purchase of the ferries by the city †	\$444,101	30
Purchase of ferries, April, 1870	276,375	00
* Expenditures for ferry-boats since April, 1870,	618,070	58
* Expenditures for new buildings, piers, drops, etc.	530,523	64
* Expenditures for tools and fixtures	14,752	46
Expenditures for land from Lincoln's wharf in 1887	5,562	52
Expenditures for land from Battery wharf in 1893	10,000	00
Total expenditures on capital account	\$1,899,385	50
* Expenditures for repairs of all kinds	788,109	33
* Expenditures for fuel	1,241,406	15
* Expenditures for salaries and wages	4,199,029	06
Expenditures for all other purposes	1,480,716	44
	<u>\$9,608,646</u>	<u>48</u>

TOTAL RECEIPTS FROM FERRIES SINCE 1858-59.

Receipts from rents, etc., previous to purchase of ferries	\$29,588	56
* Receipts from ferry tolls since purchase of ferries	5,756,073	36
* Receipts from rents since purchase of ferries	59,751	46
* Receipts from sales of ferry-boats	147,331	21
* Receipts from all other sources, per ferry books	13,965	53
Receipts from all other sources, additional per Auditor	30,690	00
	<u>\$6,037,400</u>	<u>12</u>
Less rejected money destroyed	\$104	18
Less amount counted twice	33	00
Less amount in hands of tollmen	550	00
	<u>687</u>	<u>18</u>
Total per City Auditor's figures	<u>\$6,036,712</u>	<u>94</u>

* According to books of the Ferry Division.

† See footnote, § under Table 4.

REGULAR ANNUAL (ORDINARY) AND SPECIAL APPROPRIATIONS
(EXTRAORDINARY) OF THE FERRY DIVISION OF THE STREET
DEPARTMENT FOR THE YEAR ENDING JANUARY 31, 1905.

Appropriation for the year ending January 31,

1905 \$243,600 00
Received by transfer 14,526 20

Total amount \$258,126 20

Amount of expenditures \$258,126 20

SPECIAL APPROPRIATIONS.

Appropriation authorized and issued May 27,
1902, for ferry improvements \$100,000 00

Amount expended from May 27,
1902, to February 1, 1903 . . . \$58,650 99

Amount expended from Feb-
ruary 1, 1903, to February 1,
1904 41,333 41

Amount expended from Feb-
ruary 1, 1904, to February 1,
1905 99,984 40

Unexpended balance of appropriation January
31, 1905 \$15 60

STATEMENT SHOWING RECEIPTS AT EACH FERRY.

North Ferry.

From Tollman.	Foot Passengers.	Team Tickets.	Total.
No. 2.....	\$15,959 50	\$2,565 00	\$18,524 50
" 3.....	15,670 20	2,511 50	18,181 70
" 5.....	16,040 09	2,318 50	18,358 59
" 6.....	15,830 29	2,653 50	18,483 79
" 9.....	15,916 54	2,729 00	18,645 54
" 10.....	4,232 51	1,225 00	5,457 51
" 13.....	15,365 47	2,347 50	17,712 97
	\$99,014 60	\$16,350 00	\$115,364 60

From tollmen \$115,364 60

From gatemen:

For 83,255 foot passengers, at 1 c. . . \$832 55

For cash fare for teams 7,381 75

8,214 30

Total at North Ferry \$123,578 90

South Ferry.

From Tollman.	Foot Passengers.	Team Tickets.	Total.
No. 1.....	\$7,146 45	\$2,927 00	\$10,073 45
" 4.....	6,605 62	1,564 50	8,170 12
" 7.....	7,178 41	2,993 00	10,171 41
" 8.....	6,747 10	3,315 50	10,062 60
" 11.....	1,062 76	80 00	1,142 76
" 12.....	1,147 95	92 50	1,240 45
	<u>\$29,888 29</u>	<u>\$10,972 50</u>	<u>\$40,860 79</u>

From tollmen \$40,860 79

From gatemen :

For 77,774 foot passengers, at 1 cent, \$777 74

For cash fares for teams . . . 6,185 62

6,963 36

Total at South Ferry \$47,824 15

North and South Ferries, as above . . . \$171,403 05

Tickets paid for at office of City Collector . . 438 00

Tickets paid for at office of Ferry Division . . 2,138 10

Received in lieu of free ferries, July 4, 1904 . . 1 00

Total ferriage receipts \$173,980 15

Rents for the year 1,324 50

Sales of old material, head-house and bootblack
privileges 846 55

Total cash receipts, as above . . . \$176,151 20

STATEMENT SHOWING THE DIFFERENCE OF TRAVEL ON THE FERRIES
FROM FEBRUARY 1, 1904, TO FEBRUARY 1, 1905.

	North Ferry.	South Ferry.
Foot passengers at 1 cent each . .	9,984,715	3,066,603
Foot passengers by ticket . .	106,641	42,074
Foot passengers free . .	76,525	2,060
Total foot passengers . .	<u>10,167,881</u>	<u>3,110,737</u>

One-horse teams and pleasure carriages	393,928	256,759
Two-horse teams	129,522	125,204
Three-horse teams	4,577	5,028
Four-horse teams	6,331	6,600
Two-horse pleasure carriages and hacks	14,044	5,924
Hand-carts, etc.	3,466	1,094
Drag-wheels	17	15
Free teams	5,460	528

TOTAL TRAVEL ON BOTH FERRIES FROM FEBRUARY 1, 1900, TO
FEBRUARY 1, 1905.

	From Feb. 1, 1900, to Feb. 1, 1901.	From Feb. 1, 1901, to Feb. 1, 1902.	From Feb. 1, 1902, to Feb. 1, 1903.	From Feb. 1, 1903, to Feb. 1, 1904.	From Feb. 1, 1904, to Feb. 1, 1905.
One-horse teams.....	679,746	645,283	641,796	621,329	650,687
Two-horse teams.....	210,390	232,557	249,714	252,048	254,726
Three-horse teams.....	8,376	9,215	7,486	8,244	9,605
Four-horse teams.....	12,344	13,804	13,180	12,995	12,931
Two-horse carriages and hacks,	15,390	16,365	19,115	19,594	19,968
Two-cent. tolls for handcarts, etc.....	5,547	13,582	6,720	6,847	4,560
Drag-wheels, etc.....	60	122	86	11	32
Foot passengers.....	12,243,877	12,395,649	12,923,734	13,213,559	13,200,033

TICKET STATEMENT FOR THE YEAR 1904-05.

	Balance out- standing Jan. 31, 1904.	Sold during the Year.	Delivered on Requisitions.	Total.	Received and Destroyed.	Balance out- standing Jan. 31, 1905.
Foot passes.....	205,747	107,310	43,050	356,107	148,715	207,392
One-horse team-tickets...	78,499	354,896	3,888	437,283	357,492	79,791
Two-horse team-tickets...	47,912	231,200	1,632	280,744	232,540	48,204
Three-horse team-tickets..	5,126	7,974	.....	13,100	8,205	4,895
Four-horse team-tickets...	6,499	11,560	.....	18,059	11,876	6,183
One-horse carriage-tickets	21,232	24,220	300	45,752	25,004	20,748
Two-horse carriage-tickets	2,308	8,420	.....	10,728	8,453	2,275

APPENDIX C.

REPORT OF THE DEPUTY SUPERINTENDENT OF THE
PAVING DIVISION.

ROOM 44, CITY HALL, BOSTON, February 1, 1905.

HON. JAMES DONOVAN,

Superintendent of Streets:

DEAR SIR, — The annual report of the expenditures and income of the Paving Division of the Street Department for the financial year ending January 31, 1905, is herewith submitted, showing the nature of the work, the number and variety of permits issued, and the details of expenditures involved in paving, macadamizing, regulating, and constructing various streets.

Respectfully yours,

H. V. MACKSEY,

Deputy Superintendent.

The Paving Division has charge of the following work:

The maintenance and rebuilding of street surfaces and sidewalks.

The placing of signs.

The numbering of buildings.

The issuing of permits to open or occupy the streets or for such other purposes as may be required under the ordinances.

The removal of snow and ice from gutters, streets and plank sidewalks.

The cleaning of streets in the suburban districts not covered by the Street Cleaning Division.

The division is in charge of a deputy superintendent, with a clerical force under the direction of a chief clerk, and an engineering force under the supervision of a chief engineer.

The repairs upon asphalt pavement have been supervised, located and plotted upon plans prepared for that purpose.

The agreement made in 1903, whereby the asphalt repairs on streets on which the maintenance guarantee has expired are guaranteed for a period of three (3) years, was continued during the year.

Under the provisions of chapter 323 of the Acts of 1891, and acts in amendment thereof or in addition thereto, there were seven (7) streets and one (1) public alley built, and two (2) streets and two (2) boulevards partly completed during the year.

Belgrade avenue, from South street to Anawan avenue: the work of constructing the street was carried on during the year; the Boston Elevated Railway Company completed the track construction, and the street is sub-graded and ready for the regulating. It will be completed during 1905.

Bennington street, from Prescott street to Bremen street, and from Moore street to the Revere town line has been completed. The portion between Moore and Bremen streets is in abeyance, awaiting the report of the Commission for the Abolishment of Grade Crossings.

Columbia road, from the bridge over the N. Y., N. H. & H. Railroad to Marine Park, is completed with the exception of the portion from the bridge to Covington street; this section will be completed early in the coming season.

Hyde Park avenue, from Walk Hill to Ashland street: the sub-grading on this street is completed; the Boston Elevated Railway Company have all the track constructed except a small portion. The regulating will be completed during the coming season.

During the year a number of streets in the residential section of the city have been surfaced with bitulithic pavement. This pavement was introduced two years ago and is a very satisfactory pavement, particularly on grades where on account of the peculiarity of its composition horses are enabled to travel upon it in safety.

In the City Proper the following streets were laid with this pavement:

Ashburton place, Bowdoin street to Somerset street.

Boylston street, Dartmouth street to B. & A. Railroad bridge.

Emerald street, Dover street to Castle street.

West Newton street, Tremont street to Columbus avenue.

Roxbury.

Roxbury street, Shawmut avenue, across Kent street.

Smith street, St. Alphonsus street to Phillips street.

The department force has been employed during the year in repairing and resurfacing streets, and about 28 miles, or 420,000 square yards, of streets have been resurfaced.

A vast amount of work remains to be done not only on macadam streets, but also upon paved streets, in order that they may be put in proper condition. The amount of paving and regulating done by the department, irrespective of the pitch and pebble work, is as follows :

Edgestones set and reset	30,899 linear feet
Block paving on gravel	54,639 square yards
Brick sidewalks laid	16,268 “ “
Artificial stone sidewalks laid	89,154 “ “
Artificial stone curbing laid	35 linear feet
Coal-tar concrete walks	196 square yards

Paving.

Edgestones set	18,724 linear feet
Concrete base laid	15,596 square yards
Granite block paving on a concrete base, laid with pitch and pebble joints	22,992 “ “
Granite flagging on a concrete base, laid with pitch and pebble joints	1,096 “ “
Granite block pavement laid on a gravel base, with gravel joints	21,026 “ “
Granite flagging laid on a gravel base, with gravel joints	637 “ “
Bitulithic pavement laid	18,211 “ “
Trinidad asphalt laid	8,810 “ “
Brick sidewalks laid	15,568 “ “
Artificial stone sidewalks laid	3,417 “ “

Beverly street, from Washington street North to Causeway street, was completed last year; the portion between Causeway street and the Warren bridge was completed this year. It was paved with large granite blocks on a 6-inch Portland cement concrete base, with pitch and pebble joints, including the track area, which was paid for by the Boston Elevated Railway Company. The work was done under contract by D. J. Kiley. This contract was extended to include Warren avenue, Charlestown, as far as the railroad crossing. This section was paved with new blocks on a gravel base with gravel joints, including the track area, which was paid for by the Boston Elevated Railway Company; the old blocks were removed to the different paving yards by the contractor, who also did the regulating. The former surface was granite blocks on a gravel base with gravel joints.

Front street, Charlestown, from Warren avenue to Austin street, was paved with large granite blocks on a gravel base with gravel joints by P. Brennan & Co., who also did the regulating and excavating. The old blocks were hauled to the Charlestown paving yard by the contractor. The former surface was blocks on a gravel base with gravel joints.

Kneeland street, from Atlantic avenue to Harrison avenue, was paved under contract by J. J. Coughlan, with large granite blocks, on a 6-inch Portland cement concrete base, with pitch and pebble joints, including the area of the tracks, which was paid for by the Boston Elevated Railway Company. The excavating and regulating were done by the contractor. The old blocks were hauled to the lot on Massachusetts avenue by the contractor. The former surface was granite blocks on a gravel base with gravel joints.

Court street, from westerly side of the Old Court House to Tremont street, was paved with large granite blocks on a 6-inch Portland cement concrete base, with pitch and pebble joints, under contract by Benj. M. Cram, who also did the excavating and regulating. The former surface was granite blocks on a gravel base with gravel joints.

Causeway street, from Haverhill street to Beverly street, was paved with large granite blocks on a 6-inch Portland cement concrete base, with pitch and pebble joints, including the track area, which was paid for by the Boston Elevated Railway Company. The paving and regulating were done, under contract, by D. J. Kiley, who also did the necessary excavating. The former surface was granite blocks on a gravel base with gravel joints.

ASPHALT.

Boylston street, from Massachusetts avenue to St. Cecilia street, was paved with one and one-half ($1\frac{1}{2}$) inches of Trinidad asphalt wearing surface and one and one-half ($1\frac{1}{2}$) inches of asphaltic cement concrete binder laid on a 6-inch Portland cement concrete base, under a ten (10) years' maintenance guarantee, by the Barber Asphalt Paving Company, with the track area paved with large granite blocks on a 6-inch Portland cement concrete base, with pitch and pebble joints, under contract by J. J. Coughlan, who also did the regulating. The excavating for the roadway was done by the city. The former surface was macadam.

Barton court, from Brighton street to Barton street, was paved with one and one-half ($1\frac{1}{2}$) inches of Trinidad asphalt wearing surface and one and one-half ($1\frac{1}{2}$) inches of asphaltic cement concrete binder on a 6-inch Portland cement concrete base, under a ten (10) years' maintenance guarantee, by the Barber Asphalt Paving Company. The excavating and regulating were done by the city. The former surface was Trinidad asphalt on a cobble base.

Court street, from Washington street to westerly side of the Old Court House, was paved with one and one-half ($1\frac{1}{2}$) inches of asphalt wearing surface and one and one-half ($1\frac{1}{2}$) inches of asphaltic cement concrete binder, on a six (6) inch Portland cement concrete base, under a ten (10) years' maintenance guarantee, by the Barber Asphalt Paving Company, who also did the excavating and regulating with the exception of that portion of

the sidewalk in front of the Old Court House, which was laid with an artificial stone sidewalk, under a ten (10) years' guarantee, by the Warren Bros. Company, who furnished all materials and did the excavating. The former surface of the street was part asphalt and part granite blocks on gravel.

Court square (westerly roadway), was resurfaced with one and one-half ($1\frac{1}{2}$) inches of Trinidad asphalt wearing surface and one and one-half ($1\frac{1}{2}$) inches of asphalt cement concrete binder on the existing concrete base, by the Barber Asphalt Paving Company, who also removed the old surface and laid some Portland cement concrete which was required to smooth out inequalities in the old base. On the easterly side of the roadway a two (2) foot granite block gutter with grout joints, on a 6-inch Portland cement concrete base, was laid by the city, which also did the regulating.

Columbus avenue, from 100 feet south of Ferdinand street to the bridge over the Boston & Albany Railroad, was paved with one and one-half ($1\frac{1}{2}$) inches of Trinidad asphalt wearing surface and one and one-half ($1\frac{1}{2}$) inches of asphaltic cement concrete binder on a six (6) inch Portland cement concrete base, under a ten (10) years' maintenance guarantee, by the Barber Asphalt Paving Company, who also did the regulating and excavating. The track area and the intersection of Berkeley street were paved with large granite blocks on a six (6) inch Portland cement concrete base, with pitch and pebble joints. The brow outside of the rail, for one and one-half ($1\frac{1}{2}$) feet in width, was paved with large granite blocks on a six (6) inch Portland cement concrete base, and a two (2) inch Portland cement bed with pitch and pebble joints. The paving of the track area was paid for by the Boston Elevated Railway Company. The former surface was granite blocks on gravel base with gravel joints.

Roxbury street and Washington street, Guild row, across Marvin street, was paved in part with one and one-half ($1\frac{1}{2}$) inches of Trinidad asphalt wearing surface and one and one-half ($1\frac{1}{2}$) inches of asphaltic cement concrete binder on a six (6) inch Portland cement concrete base, under a ten (10) years' maintenance guarantee, by the Barber Asphalt Paving Company. The track area and easterly side of Washington street, from Roxbury street across Marvin street, was paved with large granite blocks on a six (6) inch Portland cement concrete base, with pitch and pebble joints, under contract by H. P. Nawn, who also did part of the regulating and excavating. The track area was paid for by the Boston Elevated Railway Company. The former surface was granite blocks on a gravel base with gravel joints and macadam.

E street, from West Seventh to West Eighth street, was paved with one and one-half ($1\frac{1}{2}$) inches of Trinidad asphalt wearing surface and one and one-half ($1\frac{1}{2}$) inches asphaltic cement concrete binder on a six (6) inch Portland cement concrete base, under a ten (10) years' maintenance guarantee, with the exception of the track area, which was paved with large granite blocks

on a six (6) inch Portland cement concrete base with pitch and pebble joints, under contract by William Higgins and paid for by the Boston Elevated Railway Company. The regulating was done by William Higgins and excavating for roadway by the city. The asphalt was laid by the Barber Asphalt Paving Company. The former surface was granite blocks on a gravel base with gravel joints.

Harris street, from Hanover street to North street, was paved with one and one-half ($1\frac{1}{2}$) inches of Trinidad asphalt wearing surface and one and one-half ($1\frac{1}{2}$) inches of asphaltic cement concrete binder on a six (6) inch Portland cement concrete base, under a ten (10) years' maintenance guarantee, by the Barber Asphalt Paving Company. The regulating and excavating were done by the city. The former surface was coal tar on a cobble base.

Hawes street, from Congress street to Kilby street, was paved with one and one-half ($1\frac{1}{2}$) inches of Trinidad asphalt wearing surface and one and one-half ($1\frac{1}{2}$) inches of asphaltic cement concrete binder on a six (6) inch Portland cement concrete base, under a ten (10) years' maintenance guarantee, by the Barber Asphalt Paving Company. The regulating and excavating were done by the city. The former surface was granite blocks on a gravel base with gravel joints.

Kilby street, from State to Central street, was resurfaced with one and one-half ($1\frac{1}{2}$) inches of Trinidad asphalt wearing surface and one and one-half ($1\frac{1}{2}$) inches of asphaltic cement concrete binder on the existing concrete base, under a ten (10) years' maintenance guarantee, by the Barber Asphalt Paving Company, who also laid some Portland cement concrete base which was required to smooth out the inequalities in the old base. The excavating of the old surface was done by the contractor.

North Bennet street, from Hanover street to Salem street, was paved with one and one-half ($1\frac{1}{2}$) inches of Trinidad asphalt wearing surface and one and one-half ($1\frac{1}{2}$) inches of asphaltic cement concrete binder on a six (6) inch Portland cement concrete base, under a ten (10) years' maintenance guarantee, by the Barber Asphalt Paving Company, who also did the regulating and excavating. The former surface was asphalt on a concrete base.

Dorchester street, easterly corner of Vinton street, in front of M. E. Church, in southerly roadway, was paved with one and one-half ($1\frac{1}{2}$) inches of Trinidad asphalt wearing surface and one and one-half ($1\frac{1}{2}$) inches of asphaltic cement concrete base on a six (6) inch Portland cement concrete base, under a ten (10) years' maintenance guarantee, by the Barber Asphalt Paving Company. The excavating and regulating were done as part of W. J. Rafferty's contract, who constructed the balance of the street. The former surface of the street was granite blocks on a gravel base with gravel joints.

BITULITHIC PAVEMENT.

This is a patent pavement composed of crushed stone and bituminous cement. It is laid six (6) inches deep, four inches of which is composed of No. 1 crushed stone, well rolled and treated with two layers of bituminous cement. The other two inches, or wearing surface, is composed of a crushed stone varying in size from two (2) inches to a fine dust, and heated and mixed with bituminous cement and rolled with a steam road roller. This pavement was laid in the following streets under a ten (10) years' maintenance guarantee, by the Warren Bros. Company.

Ashburton place, from Bowdoin street to Somerset street. The intersection of Bowdoin street and twenty-five feet from Bowdoin street was paved with large granite blocks with pitch and pebble joints on a concrete base. The regulating and excavating was done by the Contractor. The former surface was macadam.

Boylston street, from Dartmouth street to the bridge over Boston & Albany Railroad, with the exception of the track area and that portion of the street from Hereford street to the bridge, which was paved with large granite blocks on a six (6) inch Portland cement concrete base, with pitch and pebble joints. The brows and three feet of each track were paved with large granite blocks on a six (6) inch Portland cement concrete base with pitch and pebble joints and a cement bed.

On this street the railroad company used a "T" rail and had a special block cut to take the place of the old flange in the rail. The work was done under contract by Warren Bros. Company, who also did the excavating and regulating. The track area was paid for by the Boston Elevated Railway Company. The former surface was macadam.

Emerald street, from Dover to Castle street. The contractor did the excavating and regulating. The former surface was granite blocks on gravel base with gravel joints.

Roxbury street, from Shawmut avenue across Kent street, with the exception of the track area, which was paved with large granite blocks on a six (6) inch Portland cement concrete base, with pitch and pebble joints. The contractor did the excavating and regulating. The track area was paid for by the Boston Elevated Railway Company. The former surface was macadam.

Smith street, from St. Alphonsus street to Philips street. The contractor also did the regulating and excavating. The former surface was macadam.

West Newton street, from Tremont street to Columbus avenue. The contractor also did the regulating and the excavating. The former surface was macadam.

ASSESSMENT STREETS.

The following streets have been constructed under the provisions of chapter 323 of the Acts of 1891, and the acts in amendment thereof or in addition thereto:

Belgrade avenue, from South street to Anawan avenue, is about 4,588 feet long and was relocated, widened and grade established September 5, 1903. A contract for constructing the surface of that portion of the street, between South street and 120 feet west of Newburg street was awarded to Philip Doherty, April 25, 1904. Work under this contract was begun May 3, 1904, and suspended October 23, 1904. A contract for constructing the surface of that portion of the street between 120 feet west of Newburg street to Anawan avenue, was awarded to Philip Doherty, June 6, 1904. Work under this contract was begun June 29, 1904, and suspended October 22, 1904. Work on both sections consisted of rough grading and filling by the contractor. The Boston Elevated Railway Company have completed their work on the tracks. The street will be completed some time in the ensuing year.

Bennington street, Day square to the Revere town line, is about 9,621 feet long and was widened to 100 feet and relocated June 27, 1899. This street has a 60-foot Telford macadam roadway, with granite block gutters, two (2) 20-foot sidewalks; 12 feet of each is loam, and the balance brick or crushed stone. The section between Saratoga street and the Revere town line was awarded to Coleman Bros., May 22, 1903. Work was started June 10, 1903, and completed September 27, 1904. The section from Prescott street to Bremen street was awarded to James Doherty, May 12, 1904. Work under this contract was begun May 21, 1904, and completed August 16, 1904. There is now one section between Bremen street and Moore street to be completed. The construction plans are ready, but the railroad bridge is not yet under way.

Columbia road, Blue Hill avenue to Marine Park, is 20,807 feet long and was relocated and laid out August 31, 1897. The portion between Blue Hill avenue and Old Colony Railroad and the portion between Covington street and Q street have been completed. Between Blue Hill avenue and Edward Everett square it is a Telford macadam construction, consisting of two roadways, one for pleasure driving and the other for ordinary traffic. There is a 25-foot reservation between the roadways for surface cars. The sidewalks are 13 feet wide on the pleasure drive and 10 feet wide on the traffic road. Between Edward Everett square and Buttonwood street is a single roadway of Telford macadam, sidewalks of crushed stone and planting space between the sidewalk and roadway. Between Buttonwood street and the Old Colony Railroad bridge it is composed of two roadways, one of Telford macadam for ordinary traffic and a 9-foot macadam road for pleasure driving. Between the roads is a

15-foot reservation for surface cars. The sidewalks are composed of crushed stone. On the pleasure drive there is a planting space between the sidewalk and the roadway, and on the traffic side there are large planting spaces back of the sidewalk. Between the railroad bridge and Covington street the contract for construction was awarded to T. F. Bradley, July 15, 1903. Work under this contract was begun August 18, 1903. The construction is progressing and will be completed during the summer of 1905. From Covington street to I street was awarded to H. P. Nawn, May 5, 1903. Work was begun under this contract July 20, 1903, and completed June 11, 1904. Between I and Q streets was also awarded to H. P. Nawn, November 18, 1902. Work was begun under this contract April 24, 1903, and completed July 1, 1904.

Causeway street, from Beverly street 140 feet toward Medford street was relocated and widened August 8, 1903. A contract for constructing the surface of this street was awarded to D. J. Kiley, June 24, 1904. Work under this contract was begun July 2, 1904, and completed September 28, 1904. It is paved with large granite blocks, with pitch and pebble joints, on a 6-inch Portland cement concrete base, including the area of the tracks, which was paid for by the Boston Elevated Railway Company; the sidewalks were paved with brick. The paving blocks, flagging, edgestone and crushed stone, for the concrete, were furnished by the city and hauled by the contractor. The cement for the concrete and brick were delivered by the city on the site of the work.

Cummington street, Blandford street to Lawton street, is about 1,186 feet long, and was laid out January 24, 1899. The contract for the surface of this street was awarded to James J. Coughlan, September 24, 1903. Work under this contract was begun November 16, 1903, and suspended November 30, 1903. Work was resumed March 13, 1904, and completed May 21, 1904. It is a 6-inch macadam roadway, granite block gutters and crushed stone sidewalks. The straight edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The circular edgestone and gutter blocks were furnished by the city on the site of the work.

Dorchester street, between West Eighth street and Dorchester avenue, is about 1,917 feet long and was relocated July 29, 1903. A contract for constructing the surface of this street was awarded to W. J. Rafferty, April 29, 1904. Work under this contract was begun May 16, 1904, and completed November 23, 1904. The pavement is granite blocks on a gravel base and brick sidewalks. The straight edgestones, paving blocks and flagging were furnished by the city and hauled by the contractor. The brick for the sidewalks and circular edgestones were furnished by the city on the site of the work. The rough grading was done by the city. On Dorchester street, at the easterly corner of Vinton street, in front of the M. E. Church, a contract was awarded to the Barber Asphalt Paving Company to construct

and maintain under a 10-year guarantee a Trinidad asphalt wearing surface with a bituminous binder on a 6-inch Portland cement concrete base. A contract was also made with M. J. Collins to build a retaining wall in front of Cyrus Alger estate, to support the street.

Franklin street, from Cambridge street to Boston & Albany Railroad, is about 220 feet long and was relocated and grade established October 14, 1903. A contract for constructing the surface of this street was awarded to M. J. Coyle, May 14, 1904. Work under this contract was begun June 6, 1904, and completed July 2, 1904. It is a 6-inch macadam roadway with block gutters and brick and tar concrete sidewalks. The straight edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The gutter blocks and circular edgestones were furnished by the city on the site of the work.

Hyde Park avenue, from Walk Hill street to about 287 feet north of Ashland street, is about 6,576 feet long and was relocated and widened September 5, 1903. A contract for constructing the surface of the portion of the street between Walk Hill street and the bridge over Stony brook was awarded to Thomas F. Minton, May 12, 1904. Work under this contract was begun May 19, 1904, and the work is still progressing. A contract was also awarded to Thomas F. Minton for that portion of the street between the bridge over Stony brook to about 287 feet north of Ashland street. Work under this contract was begun July 7, 1904, and is still progressing. This is a 6-inch macadam roadway with granite block gutters, crushed stone and brick sidewalks. The straight edgestones, flagging and crushed stone were furnished by the city and hauled by the contractor. The granite blocks for the gutters and circular edgestones were furnished by the city on the site of the work.

Oswald street, between Calumet and Hillside streets, is about 298 feet long and was laid out and grade established November 24, 1902. A contract for constructing the surface of this street was awarded to Philip Doherty, November 19, 1903. Work was begun under this contract November 24, 1903, and suspended December 17, 1903; resumed April 14, 1904, and completed June 9, 1904. This is a 6-inch macadam roadway, with granite block gutters, brick and crushed stone sidewalks. The straight edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The granite blocks for the gutters, brick and circular edgestones were furnished by the city on the site of the work.

Public alley 303, from Pinckney street, southerly, is about 76 feet long and was laid out and grade established November 6, 1902. A contract for constructing the surface of this street was awarded to Benj. M. Cram, June 24, 1904. Work under this contract was begun June 28, 1904, and completed July 18, 1904. This alley is paved with No. 1 granite blocks on a gravel base with grout joints. The edgestones and granite paving blocks were furnished by the city and hauled by the contractor. The bricks were furnished by the city on the site of the work.

Seymour street, between Brown avenue and Canterbury street, is about 1,149 feet long and was laid out September 25, 1899. A contract for constructing the surface of this street was awarded to Thomas F. Minton, October 27, 1903. Work under this contract was begun October 29, 1903, and suspended December 26, 1903; resumed April 20, 1904, and completed July 5, 1904. This a 6-inch macadam roadway, granite block gutters and crushed stone sidewalks. The straight edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The granite blocks for the gutters were furnished by the city on the site of the work.

Walter street, from Centre street to South street, is about 3,735 feet long and was relocated and laid out October 4, 1901. A contract for constructing the surface of this street was awarded to Thomas F. Welch, June 4, 1903. Work under this contract was begun June 30, 1903, suspended December 23, 1903; resumed March 23, 1904, and completed June 15, 1904. This a 6-inch macadam roadway, with granite block gutters and crushed stone sidewalks. The straight edgestone, flagging and crushed stone were furnished by the city and hauled by the contractor. The granite blocks for paving were furnished by the city on the site of the work.

THE STONE CRUSHING PLANTS.

There are thirteen stone crushers, varying in size from 9 by 15 to 18 by 36, with a crushing capacity of from 150 to 400 tons per day. These crushers are attached to eight crushing plants, three being in Dorchester, three in Roxbury, and one each in West Roxbury and Brighton. Their general condition is very good and with some minor repairs will be in good working order for the coming season.

FINANCIAL STATEMENT.

PAVING DIVISION.

Maintenance	\$850,000 00	
Amount collected for repairs made by paving division for different companies, etc. .	763 10	
Transferred from appropriation for street improvements .	115,000 00	
Transferred from various appro- priations	107,682 32	
	<hr/>	\$1,073,445 42
Expenditures from February 1, 1904, to January 31, 1905		<u>\$1,073,445 42</u>

STREET IMPROVEMENTS.

Amount of appropriation . . .	\$500,000 00	
Amount of loan . . .	300,000 00	
Amount collected for repairs made by Paving Division for different companies, etc. . .	31,768 77	
Transferred from appropriation for Shawmut-avenue bridge, rebuilding	7,226 46	
Transferred from appropriation for foot-bridge over N. Y., N. H. & H. R.R. at Sarsfield street	5,000 00	
Transferred from appropriation for foot-bridge over N. Y., N. H. & H. R.R. at Northamp- ton street	5,000 00	
Transferred from appropriation for Carleton street	13,000 00	
	<hr/>	
	\$861,995 23	
Less amount transferred to ap- propriation for paving divi- sion	115,000 00	
	<hr/>	
		\$746,995 23
Expenditures from February 1, 1904, to January 31, 1905		744,086 89
		<hr/>
Unexpended balance January 31, 1905 . .		\$2,908 34
		<hr/>

TOTAL EXPENDITURES.

Maintenance appropriation, Paving Division . .	\$1,073,445 42
Street improvements	744,086 89
Atlantic avenue, reconstruction	50,647 49
Brandon street and Belgrade avenue	5,371 11
Dorchester street	39,374 75
Foot-bridge over N. Y., N. H. & H. R.R. at Gainsborough street	2,812 13
Freeport street, retaining wall	4,797 00
Hyde Park avenue	19,710 15
Reconstruction of bridges over railroad tracks at Norfolk, Harvard, Medway and West Selden streets	61,482 60
Construction of highways already laid out . .	30,168 00
Highways, making of	106,942 81
Laying out and construction of highways, Bigh- ton	8,849 18
	<hr/>
	\$2,147,687 53
	<hr/>

INCOME.

Statement showing the amount of bills deposited with the City Collector from February 1, 1904, on account of the Paving Division:

Edgestone and sidewalk assessments . . .	<u>\$19,457 54</u>
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The amount paid into the City Treasury during the year on account of the Paving Division was as follows:

Sidewalk construction assessments (law of 1892),	\$1,026 46
Sidewalk construction assessments (law of 1893),	27,449 70
	<u>\$28,476 16</u>

Objects of Expenditures from the Regular Appropriation, Classified by Districts, from February 1, 1904, to
January 31, 1905.

DISTRICTS.	Repairs.	Snow.	Edgestone and Sidewalk Repairs.	Repairing Fences.	Repairing Plank Walks.	Miscellaneous.	In Excess of Appropriation for Street Improvements.	Totals.
1. South Boston.....	\$3,555 02	\$30,421 96	\$9,438 88	\$1,252 48	\$230 94	.....	\$783 71	\$45,682 99
2. East Boston.....	7,475 15	8,253 50	7,549 44	1,058 55	193 38	.....	1,660 82	26,190 84
3. Charlestown.....	9,226 76	14,762 81	2,857 58	419 48	53 31	.....	175 00	27,494 94
4. Brighton.....	5,640 19	8,491 97	3,419 31	257 01	102 08	.....	357 00	18,267 56
5. West Roxbury..	9,356 06	15,653 78	1,025 25	1,322 08	44 08	.....	296 03	28,297 28
6. Dorchester.....	41,742 85	18,344 11	8,613 18	931 63	1,477 76	.....	342 15	71,451 68
7. Roxbury.....	38,288 64	22,862 64	9,595 24	2,207 08	1,624 54	.....	.....	74,578 14
8. South End.....	17,269 29	67,410 24	7,512 60	487 50	243 00	.....	4,139 84	97,082 47
9. Back Bay.....	7,745 54	21,076 30	6,658 62	1,752 12	233 19	.....	4,313 50	41,779 27
10. North End	23,802 86	57,563 12	3,575 77	40 50	.....	.....	851 01	88,833 26
	.....	.....	.....	.....	.....	\$556,806 99	.....	\$556,806 99
Total.....	\$164,702 36	\$264,840 43	\$60,245 87	\$9,728 43	\$4,202 28	\$556,806 99	\$12,919 06	\$1,073,445 42

SCHEDULE A.

Salaries of Deputy Superintendent and office employees	\$11,906 31
Salaries of permit office employees	8,544 24
Salaries of Inspectors	23,897 24
Salaries of Engineers	20,562 15
Holidays	54,997 43
Signs and numbers	4,982 58
Furniture	65 39
Repairing offices, stables, sheds, etc.	3,726 36
Repairing stable at South yard	718 66
Repairing office and buildings at North yard	2,421 39
Repairing sheds, etc., at Revere-street yard	162 41
Printing and stationery	7,274 89
Gas and electric lighting	677 03
Wharfage and rent	11,608 58
Medical attendance on injured employees	526 00
Fuel and oil	3,883 99
Taxes	2,312 82
Advertising	195 43
Sundries	4,154 64
Expenses of yards and stables, including repairs to carts, harnesses, and care of horses, etc.,	\$195,594 50
Less amount earned by division teams	84,163 91
	<hr/>
	111,430 59
Engineering supplies	240 33
Pay allowed to injured employees	419 00
Telephone service and tolls	2,507 39
Shanties, repairing, etc.	195 00
Veterinary services	2,237 00
Artificial stone sidewalks, repairing and rebates allowed	7,631 86
Stoves, pipes, etc.	285 64
Tools, cost of keeping same in repair, etc.	26,037 35
Codman crusher, reconstructing	6,463 50
Columbia crusher, reconstructing	6,898 09
Rosseter crusher, reconstructing	6,040 77
Bleiler crusher, reconstructing	9,510 54
Street cleaning	88,786 07
Edgestones and sidewalks, new	9,741 97
Fences and plank walks, new	66 50
Crossing repairs	9,174 42
Crossings, new	1,656 48
Sanding icy streets	382 20
Sea-wall at South yard (uncompleted from 1903)	15,786 71
<i>Carried forward</i>	<hr/> \$468,108 95

<i>Brought forward</i>	\$468,108 95
Oatmeal	241 05
Circuit street, iron fence	395 00
Eastman street, retaining wall (unfinished)	97 50
Chelsea bridge, damaged by fire	224 25
Expressage on empty oil barrels	25 75
Rent of towels	106 20
Sawdust	4 00
Extra postage, etc.	58 33
Ice	112 10
Expert services at ledge	125 00
Travelling expenses, etc.	1,066 33
Subscriptions	23 00
Messenger service	95
Damages	4 00
Constables' bond	15 00
Framing awards	1 40
Tide-water displacement, Charlestown yard	36 25
Dredging dock at South yard	730 80
Setting up derrick	28 20
Photographs	4 20
Stock	24,499 39
Stone crushers	59,539 88
Steam rollers	1,359 46
	<hr/>
	\$556,806 99

DETAIL OF EXPENDITURES UNDER SPECIAL APPROPRIATIONS.

<i>Atlantic avenue</i> , reconstruction	\$50,647 49
<i>Brandon street</i> and <i>Belgrade avenue</i>	5,371 11
<i>Dorchester street</i>	39,374 75
<i>Foot-bridge</i> over N. Y., N. H. & H. Railroad at Gainsborough street	2,812 13
<i>Freeport street</i> , retaining wall	4,797 00
<i>Hyde Park avenue</i>	19,710 15
<i>Reconstruction of bridges</i> over tracks at Nor- folk, Harvard, Medway and West Selden streets	*61,482 60

STREET IMPROVEMENTS.

<i>Advertising</i>	271 71
<i>Albion street</i> , Castle to Dover street	4,047 47
<i>Alleghany street</i>	298 56
	<hr/>
<i>Carried forward</i>	\$188,812 97

* 35,700 paid by N. Y., N. H. & H. Railroad Company.

<i>Brought forward</i>	\$188,812 97
<i>Appleton street</i> , Tremont street to Columbus avenue,	5,393 93
<i>Arlington avenue</i> , Alford to Fred street	6,328 63
<i>Ashburton place</i> , Bowdoin to Somerset street	3,692 69
<i>Ashford street</i> , Linden to Chester street	696 70
<i>Ashland street</i>	42 28
<i>Asphalt streets</i> repaired	10,855 01
<i>Atkinson street</i> , Southampton street to South Bay avenue	1,017 00
<i>Autumn street</i> , Longwood avenue to Park street	366 78
<i>Baker street</i> , Centre street to Newton line	10,518 23
<i>Barton court</i> , Barton to Brighton street	898 30
<i>Beach street</i> , Lincoln street to Harrison avenue	6,058 71
<i>Beacon street</i> , Chestnut Hill avenue to 1,200 feet southwest	6,433 33
<i>Beacon street</i> , Dartmouth to Exeter street	2,711 10
<i>Bellevue street</i> , Brookline avenue to Park street	7,547 21
<i>Bennett street</i> , Parsons street to end	303 37
<i>Beverly street</i> , Washington street to the bridge, and Warren avenue, from the bridge to Front street (uncompleted work from 1903)	* 19,729 19
<i>Bird street</i>	111 00
<i>Boardman street</i> , Saratoga to Leyden street	472 50
<i>Bolton street</i> , E to Dorchester street	5,138 81
<i>Boylston avenue</i> , Boylston to Green street	1,476 83
<i>Boylston street</i> , Boylston avenue to Washington street	890 29
<i>Boylston street</i> , Dartmouth street to Massachusetts avenue	† 59,582 89
<i>Bradbury street</i> , Franklin to Mansfield street	629 71
<i>Braintree street</i> , Franklin to Everett street	1,560 04
<i>Breed street</i> , Bennington to Ford street	347 00
<i>Brighton avenue</i> , Commonwealth avenue to Cam- bridge street	7,822 09
<i>Bromley park</i> , Albert to Bickford street	2,521 61
<i>Brookford street</i> , Blue Hill to Howard avenue	1,490 10
<i>Brooks' street</i> , Condor to White street	1,662 36
<i>Brown avenue</i>	350 00
<i>Bullard street</i> , Bowdoin street to Bowdoin avenue,	5,733 62
<i>Burbank street</i> , Buckingham street to end	253 10
<i>Byron street</i> , retaining wall at Baker Congrega- tional Church	1,160 00
<i>Cambridge street</i> , Union square to the river	8,767 89
<i>Camden street</i> , Columbus avenue to the railroad	8,131 65
<i>Canterbury street</i> , Ashland street to railroad bridge	4,539 53
<i>Carried forward</i>	\$384,046 45

* \$4,350.03 paid by Boston Elevated Railway Company. \$133.88 paid by Lovejoy's Wharf Trust.

† \$8,034.93 paid by Boston Elevated Railway Company.

<i>Brought forward</i>	\$384,046 45
<i>Causeway street</i> , Haverhill to Medford street	* 3,849 69
<i>Centre street</i> , Paul Gore to Eliot street and Church to Weld street	16,506 20
<i>Centre street</i> and Talbot avenue, at high school	1,735 98
<i>Chandler street</i> , Columbus avenue to Berkeley street	3,847 26
<i>Chaucer street</i> , Curtis to Moore street	796 39
<i>Chestnut avenue</i> , Wyman to Roys street	915 46
<i>Chickatawbut street</i> , Neponset avenue to Glide street	6,011 71
<i>Child street</i> , South to Call street	665 86
<i>Clarence street</i> , Dudley to George street	4,262 62
<i>Clarkson street</i> , Quincy to Hamilton street	2,987 12
<i>Coleman street</i> , Quincy to Hamilton street	1,874 84
<i>Columbus avenue</i> , Ferdinand street to bridge	† 26,757 61
<i>Commonwealth avenue</i> , Beacon to Babcock street	19,440 56
<i>Compton street</i> , Tremont to Village street	1,375 69
<i>Congress-street bridge</i> , repairing	6,714 83
<i>Court street</i> , Washington to Tremont street	‡ 8,164 33
<i>Court square</i> , westerly side	2,430 94
<i>Covington street</i> , East Eighth to Dixfield street	1,269 93
<i>Curve street</i> , Broadway to Albany street	1,251 70
<i>D street</i> , West Ninth street to Dorchester avenue	2,898 08
<i>Dacia street</i> , Brookford to Dewey street	3,042 80
<i>Day street</i> , Perkins to Minden street	2,954 42
<i>Dennis street</i> , Dudley to Woodville street	2,262 12
<i>Dewey street</i>	54 00
<i>Dorchester avenue</i> , Summer to Congress street, snow dump	1,308 70
<i>Dorchester avenue</i> , Columbia road to Mt. Vernon street	2,112 07
<i>Dover street</i> , Washington street to Harrison avenue, work done in 1903	\$
<i>Dorrance street</i> , Main street to Arlington avenue	2,058 93
<i>Dudley street</i> , Hampden to Warren street, and Mt. Pleasant avenue to Adams street, widened	1,312 41
<i>E street</i> , West Seventh to West Eighth street	** 6,357 14
<i>East Concord street</i> , Albany to Washington street, and West Concord street, Washington street to Shawmut avenue	9,228 06
<i>East Dedham street</i> , Albany to Washington street, and West Dedham street, Washington to Tremont street	11,547 33
<i>East Fifth street</i> , O to Q street	2,541 58
<i>Carried forward</i>	\$542,582 81

*\$1,298.40 paid by Boston Elevated Railway Company.

† \$3,813.60 paid by Boston Elevated Railway Company.

‡ \$2,482.45 paid by Boston Transit Commission.

\$ \$1,280.79 paid by Boston Elevated Railway Company.

** \$1,011.30 paid by Boston Elevated Railway Company.

<i>Brought forward</i>	\$542,582 81
<i>Easton street</i> , Franklin to Mansfield street	792 58
<i>East Second street</i> , L to M street	54 00
<i>East Seventh street</i> , N to O street	2,855 56
<i>Emerald street</i> , Castle to Dover street	12,106 31
<i>Evergreen street</i> , Day street to end	1,185 73
<i>Exchange place</i> , Congress to Kilby street (un- finished work from 1903)	253 73
<i>F street</i> , West First to West Second street	1,651 99
<i>Follen street</i> , St. Botolph street to railroad	1,376 12
<i>Ford street</i> , Saratoga to Breed street	2,612 00
<i>Frederick street</i> , West Ninth street to Old Colony avenue	1,727 60
<i>Freeport street</i> , east of Mill street	660 44
<i>Front street</i> , Warren avenue to Austin street	18,993 53
<i>G street</i> , East Broadway to East Fourth street	2,250 56
<i>G street</i> , East Eighth street to Columbia road	3,042 21
<i>Garrison street</i> , Huntington avenue to St. Botolph street	1,204 00
<i>Geneva avenue</i> , Blue Hill avenue to Columbia road,	4,933 24
<i>Gold street</i> , E to Dorchester street	5,028 83
<i>Grant street</i>	9 00
<i>Green street</i> , Boylston avenue to Washington street,	666 73
<i>Hale street</i> , from Green street 300 feet north- easterly	2,848 49
<i>Hamilton street</i> , Bowdoin street to Barry street	7,425 09
<i>Harbor View street</i> , Dorchester avenue to Sydney street	3,681 70
<i>Harris street</i> , Hanover to North street	1,782 80
<i>Hawes street</i> , Congress to Kilby street	1,286 35
<i>Haynes street</i> , Orleans to Marginal street	4,858 38
<i>Hollis street</i> , Washington street 200 feet westerly,	1,440 87
<i>Huntington avenue</i> , Dartmouth street to railroad bridge	2,286 59
<i>Hutchings street</i> , Humboldt avenue to Harold street,	5,734 60
<i>John A. Andrew street</i>	11 31
<i>Kilby street</i> , State to Central street	1,791 41
<i>Kneeland street</i> , Atlantic avenue to Harrison avenue	*26,634 08
<i>Lamartine street</i> , Hoffman to Wyman street, and Paul Gore to Green street	11,469 78
<i>Langdon street</i> , Dudley to George street	1,298 18
<i>Longwood avenue</i> , Huntington avenue to Phillips street	646 80
<i>Lowell street</i> , Minot to Brighton street	1,257 31
<i>Lyndhurst street</i> , Allston to Washington street	1,729 22
<i>M street</i> , East Eighth street to Columbia road	72 43
<i>Carried forward</i>	\$680,242 36

* \$3,091.20 paid by Boston Elevated Railway Company.

<i>Brought forward</i>	\$680,242 36
<i>Mansfield street</i> , Cambridge to Easton street	1,672 64
<i>Marginal street</i> , Orleans street to railroad	852 60
<i>Massachusetts avenue</i> , Columbus avenue to Huntington avenue (unfinished work from 1903)	*946 80
<i>Massachusetts avenue</i> , Albany street to Columbia road	11,134 91
<i>Maverick street</i> , railroad to Union court	162 90
<i>Melville avenue</i> , Dorchester avenue to Washington street	8,081 69
<i>Mendum street</i> , Fairview street 500 feet northerly,	613 48
<i>Menlo street</i> , Sparhawk to Henshaw street	484 46
<i>Meridian street</i> , Condor to Eutaw street	1,778 40
<i>Middlesex street</i> , Castle to Dover street	2,241 16
<i>Monument street</i> , Bunker Hill to Medford street	3,603 78
<i>Moore street</i> , Saratoga to Pope street	1,233 20
<i>Moreland street</i> , Blue Hill avenue to Dennis street,	415 76
<i>Mt. Vernon street</i> , Garfield to Vermont street	1,296 46
<i>Mt. Washington-avenue bridge</i> , repairing	1,171 50
<i>Murdock street</i> , Sparhawk to Elmira street	798 60
<i>N street</i> , East Eighth street to Columbia road	462 89
<i>Neponset avenue</i> , Minot street to the bridge	5,252 29
<i>New street</i> , Sumner to Maverick street	4,492 42
<i>Newbury street</i> , Hereford street to Massachusetts avenue (unfinished work from 1903)	190 25
<i>Newbury street</i> , Arlington to Fairfield street	619 10
<i>Newland street</i> , West Dedham to West Brookline street	3,327 98
<i>Newman street</i> , Dorchester to Champney street	158 50
<i>Norfolk avenue</i> , Hampden to Magazine street	5,878 22
<i>Norfolk avenue</i> , Marshfield to East Cottage street,	10,270 53
<i>Norman street</i> ,	15 00
<i>Northampton street</i> , Tremont street to Columbus avenue	3,248 88
<i>North Anderson street</i> , Cambridge to Fruit street,	3,018 41
<i>North Bennet street</i> , Hanover to Salem street	3,489 58
<i>O street</i> , East Second street to Columbia road	5,902 89
<i>Oneida street</i> , unfinished work from 1903	396 00
<i>Park street</i> , Freeport to Adams street	5,452 18
<i>Parker Hill avenue</i> , unfinished work from 1903	3,215 24
<i>Parsons street</i> , Washington to Surrey street	779 72
<i>Paulding street</i> , Dale to Bainbridge street	821 38
<i>Perkins street</i> , Parkway to Brookline line	919 04
<i>Plain street</i> , Chickatawbut street to Pierce avenue,	2,304 58
<i>Pleasant street</i> , Stoughton to East Cottage street,	163 10
<i>Plymouth street</i> , Longwood avenue to Bernier street	181 90
<i>Carried forward</i>	\$777,290 78

* \$3,318.77 paid by Boston Elevated Railway Company.

<i>Brought forward</i>	\$777,290	78
<i>Plympton street</i> , Harrison avenue to Albany street,	2,170	43
<i>Polk street</i> , Bunker Hill to Medford street	2,821	72
<i>Pope street</i> , Swift to Saratoga street (see Saratoga street).		
<i>Poplar street</i> , Washington to Sycamore street	7,216	17
<i>Princeton street</i> , Tufts to Lexington street	953	15
<i>Prospect avenue</i> , Sycamore street to Brown avenue,	531	71
<i>Providence street</i> , Berkeley to Church street	2,033	01
<i>Putnam street</i> , Saratoga to East Eagle street	2,984	97
<i>Q street</i> , East First to East Fourth street	10,628	18
<i>Quincy street</i> , Coleman street to Columbia road and Howard avenue to railroad	904	72
<i>Richfield street</i> , Columbia road to Olney street	899	82
<i>Richmond street</i> , Commercial to Fulton street and North to Hanover street	1,665	18
<i>Riverdale street</i> , Western avenue to Raymond street	990	62
<i>Rockwell street</i> , Milton avenue to Washington street	2,778	17
<i>Roxbury and Washington streets</i> , Guild row across Marvin street	* 7,758	34
<i>Roxbury street</i> , Shawmut avenue to Kent street	† 10,385	83
<i>Roxbury street</i> , Kent street to Columbus avenue	3,655	66
<i>Russell street</i> , Auburn to Sullivan street	5,107	40
<i>Saratoga street</i> , Meridian to Prescott street, and Swift street to railroad crossing, and Pope street, Swift to Saratoga street	10,504	71
<i>Savin street</i> , Blue Hill avenue to Warren street	1,555	30
<i>Shawmut avenue</i> , Upton to West Brookline street,	858	89
<i>Shirley street</i> , Massachusetts avenue 300 feet southerly, and Dudley to George street	1,815	99
<i>Smith street</i> , St. Alphonsus to Phillips street	6,921	36
<i>South street</i> , Kneeland to Beach street	‡ 6,795	90
<i>South street</i> , Centre to Jamaica street, and Bussey street to Parkway	3,692	33
<i>Southampton street</i> , Massachusetts avenue to railroad bridge	13,258	77
<i>South Fairview street</i> , South Walter to South street,	371	00
<i>South Walter street</i> , South Fairview to South street,	2,031	91
<i>St. Botolph street</i> , Massachusetts avenue to Gainsborough street	875	34
<i>Spring street</i> , Baker street to the bridge	766	68
<i>Summer street</i> , New to Liverpool and Bremen to Paris street	938	02
<i>Sycamore street</i> , Ashland to Florence street	2,827	18
<i>Carried forward</i>	\$893,989	24

* \$1,029.75 paid by Boston Elevated Railway Company.

† \$878.70 paid by Boston Elevated Railway Company.

‡ \$1,041.97 paid by Boston Elevated Railway Company.

<i>Brought forward</i>	\$893,989 24
<i>Tremont street</i> , Massachusetts avenue to Hammond street	5,368 68
<i>Trenton street</i> , Marion to Brooks street	1,395 00
<i>Tyler street</i> , Beach street to Broadway	1,511 42
<i>Vale street</i> , Mercer street to Columbia road	204 44
<i>Vermont street</i> , Mt. Vernon to La Grange street	1,514 26
<i>Wait street</i> , Huntington avenue to Hillside street	3,935 23
<i>Warren avenue</i> , drawbridge to Front street (see Beverly street).	
<i>Washington street</i> , at corner State street	635 08
<i>Washington street</i> , Marvin to Roxbury (see Roxbury street).	
<i>Washington street</i> , Oakland to Elmore street	400 75
<i>Washington street</i> , Green to Cornell street	4,481 09
<i>Washington street</i> , Centre street to Grove Hall	1,552 50
<i>Washington street</i> , Townsend street to Walnut park,	1,601 75
<i>Weld street</i> , La Grange to Baker street	1,250 55
<i>West Brookline street</i> , Albany street to Harrison avenue	2,718 78
<i>West Concord street</i> , Washington street to Shawmut avenue (see East Concord street).	
<i>West Dedham street</i> , Washington to Tremont street (see East Dedham street).	
<i>West Eagle street</i> , Meridian to Border street	721 13
<i>West Newton street</i> , Tremont street to Columbus avenue	14,372 51
<i>West Seventh street</i> , C to D street	2,348 78
<i>Willow street</i> , Centre street 400 feet northerly	544 25
<i>Winthrop street</i> , Blue Hill avenue to Dennis street,	793 50
<i>Woodville street</i> , Cottage street to Blue Hill avenue,	1,321 04
<i>Wordsworth street</i> , Milton to Homer street	386 20
<i>Wyman street</i> , West Roxbury, work not started	155 00
Total	\$941,201 18
Less amount paid out of appropriation for Paving Division	12,919 06
Total	<u>\$928,282 12</u>

HIGHWAYS, MAKING OF.

<i>Bennington street</i> , Chelsea street to Belle Isle Inlet,	\$40,046 82
<i>Bernard street</i> , Talbot avenue southeasterly to railroad	84 65
<i>Blanche street</i> , Green Hill to Preston street	46 50
<i>Blandford street</i> , Commonwealth avenue to Boston & Albany Railroad	236 94
<i>Carried forward</i>	<u>\$40,414 91</u>

<i>Brought forward</i>	\$40,414 91
<i>Bow street</i> , Washington street to City square	828 54
<i>Causeway street</i> , northwesterly side of Beverly street	4,481 76
<i>Columbia road</i>	66,579 03
<i>Cummington street</i> , Blandford to Avon street	8,879 26
<i>Devens street</i> , Rutherford avenue to Washington street	356 09
<i>Fisher avenue</i> , Hayden street to Parker Hill avenue	5 80
<i>Hale street</i> , extended to South Margin street	114 42
<i>Jersey street</i> , Brookline avenue to Audubon road	20 17
<i>Lindsey street</i> , Greenbrier to Waldeck street	250 59
<i>Oswald street</i> , Calumet to Hillside street	1,758 90
<i>Perkins street</i> , Centre street to Jamaica way	526 27
<i>Queensberry street</i> , Audubon road to Audubon road	22 76
<i>Rowe street</i> , Ashland street to Seymour street	11 40
<i>Seymour street</i> , Canterbury street to Brown avenue,	3,863 99
<i>Spalding street</i> , South street to Old Colony Railroad	750 00
<i>Walter street</i> , Centre to South street	7,810 82
<i>Public alley 303</i> , from Pinckney street	436 10
Total	\$137,110 81
Less amount paid out of appropriation for construction of Highways already laid out	30,168 00
Total	<u>\$106,942 81</u>

CONSTRUCTION OF HIGHWAYS ALREADY LAID OUT.

<i>Columbia road</i>	*
<i>Bennington street</i> , Chelsea street to Belle Isle Inlet	*
Amount included in cost for Highways, making of,	\$30,168 00
Total	<u>\$30,168 00</u>

LAYING-OUT AND CONSTRUCTION OF HIGHWAYS, BRIGHTON.

<i>Franklin street</i> , subway	\$7,113 43
Execution of court	1,735 75
Total	<u>\$8,849 18</u>

* Included in cost for Highways, making of.

New Edgestones. (Not including "323" streets.)*First Setting. Linear Feet.*

YEAR.	South Boston.	East Boston.	Charlestown.	Brighton.	West Roxbury.	Dorchester.	Roxbury.	City Proper.	Totals.
1894.....	521	816	694	1,323	1,568	6,544	39,324	1,916	52,706
1895.....	2,097	1,146	668	4,191	8,319	15,205	17,053	2,990	51,669
1896.....	3,855	807	791	8,507	2,498	21,367	20,111	43,614	101,550
1897.....	2,311	1,691	.....	1,086	5,228	37,205	14,241	5,097	66,859
1898.....	1,259	918	.....	5,909	2,185	50,124	13,252	1,281	74,928
1899.....	308	2,715	111	439	2,265	6,818	8,134	1,410	22,200
1900.....	729	616	100	.....	614	9,633	8,882	1,544	22,118
1901.....	1,925	1,184	.....	4,627	7,936	22,574	13,942	2,480	54,668
1902.....	1,957	1,121	.....	688	990	10,428	3,842	2,082	21,108
1903.....	1,578	1,581	.....	5,838	912	10,959	10,164	4,131	35,163
1904.....	1,391	1,124	569	457	2,677	3,912	3,661	2,092	15,883
Totals....	17,931	13,719	2,933	33,065	35,192	194,669	152,506	68,637	517,852

New Brick Sidewalks. (Not including "323" streets.)*First Laying. Square Yards.*

YEAR.	South Boston.	East Boston.	Charlestown.	Brighton.	West Roxbury.	Dorchester.	Roxbury.	City Proper.	Totals.
1894.....	2,706	2,115	437	.....	834	453	11,533	1,537	19,615
1895.....	1,946	1,151	408	2,908	1,734	2,146	6,246	4,103	20,642
1896.....	2,314	681	5,361	.....	542	2,616	15,897	1,044	28,455
1897.....	13,460	16,125	14,454	2,128	1,855	2,995	21,596	17,287	89,900
1898.....	4,487	6,453	4,653	216	1,225	4,723	13,783	10,121	45,661
1899.....	4,084	3,503	.....	.....	1,448	2,610	8,316	5,424	25,385
1900.....	1,069	1,476	477	873	1,583	4,033	4,999	2,858	17,368
1901.....	4,617	1,142	323	100	3,825	5,613	4,920	549	21,089
1902.....	1,319	1,425	.....	288	342	2,537	1,688	190	7,789
1903.....	1,161	635	.....	.....	182	700	2,342	186	5,206
1904.....	1,529	817	429	940	432	1,915	2,136	923	9,121
Totals....	38,692	35,523	26,542	7,453	14,002	30,341	93,456	44,222	290,231

Crushed Stone, Ballast and Telford.*Output of Stone from City Crushers.*

	Stone Crushed. <i>Tons.</i>	Telford. <i>Tons.</i>
Bleiler Crusher.....	24,658	—
Centre-street Crusher.....	29,345	—
Chestnut Hill Crusher.....	23,976	—
Codman-street Crusher.....	19,911	—
Columbia-road Crusher.....	31,269	1,370
Dimock-street Crusher.....	22,461	—
Kenney-street Crusher.....	10,825	—
Rosseter-street Crusher.....	26,800	1,891
Totals.....	189,245	3,261

STREET OPENINGS.

Permits have been issued from this office for making openings in the public streets for the year ending January 31, 1905, as follows:

	Permits.	Feet.
American Telegraph and Telephone Company....	15	47
Auxiliary Fire Alarm Company.....	11	567
Boston Automatic Fire Alarm Company.....	2	128
Boston Fire Department.....	36	2,034
Boston Lamp Department.....	334	4,259
Boston Police Department.....	42	1,181
Boston Street Department (Sewer Division).....	299	22,489
Boston Water Department.....	3,128	105,469
Boston and Albany Railroad Company.....	1	50
Boston and Maine Railroad Company.....	15	726
Boston Elevated Railway Company.....	294	109,917
Boston Low Tension Wire Association.....	21	2,077
Boston Gas Light Company.....	495	22,328
Boston Pneumatic Transit Company.....	56	6,461
Boston Transit Commission.....	11	1,700
Brookline Gas Light Company.....	247	42,929
Charlestown Gas and Electric Company.....	101	5,542
Dorchester Gas Light Company.....	273	27,505
East Boston Gas Light Company.....	187	8,422
Edison Electric Illuminating Company.....	1,357	51,730
Eastern Cold Storage Company.....	8	321
Jamaica Plain Gas Light Company.....	128	12,880
Carried forward.....	7,061	429,762

STREET OPENINGS. — *Continued.*

	Permits.	Feet.
<i>Brought forward</i>	7,061	429,762
Lynn and Boston Railroad Company.....	7	5,073
Massachusetts Pipe Line Gas Company.....	8	750
Massachusetts Telephone and Telegraph Company,	7	310
Metropolitan Water and Sewer Commission.....	12	350
New England Telephone and Telegraph Company,	373	22,926
New York, New Haven and Hartford Railroad		
Company.....	2	90
Old Colony Street Railway Company.....	6	4,941
Quincy Market Cold Storage Company.....	11	314
Postal Telegraph Cable Company.....	7	1,031
Roxbury Gas Light Company.....	229	36,328
South Boston Gas Light Company.....	174	12,147
Simpson Brothers Corporation.....	65	12,652
Standard Oil Company.....	19	203
Union Freight Railway Company.....	5	1,030
Western Union Telegraph Company.....	14	139
Warren Brothers Company.....	58	11,477
Miscellaneous.....	2,839	206,870
Emergency Permits, Class A.....	1,609	.....
Emergency Permits returned as used, 1,295; esti-		
mated length in feet.....	.....	6,108
Total.....	12,506	751,501

Making a total length of openings of about 142.3 miles.

Permits other than for street openings have been granted as follows :

	Permits.
Advertising by man wearing hat and coat lettered	7
Cleaning snow from roofs	181
Dumping snow in public alleys	50
Driving cattle	26
Erecting, removing and repairing awnings	3,825
Erecting and repairing buildings	7,963
Feeding horses on the street	706
Moving buildings	16
Loading and unloading goods	95
Pedlers (two classes)	1,094
Painting signs or notices on obstruction fences	16
Placing signs flat on buildings	2,583
Projecting lamps or signs	44
Raising and lowering safes, machinery, etc.	566
Selling goods from areas	26
Selling goods from doors and windows	268
Selling fruit, etc., from stands on the sidewalks	461
Special holiday permits for June 17, July 4, Grand	
Army week and Christmas	849
<i>Carried forward</i>	18,776

	Permits.
<i>Brought forward</i>	18,776
Special for other business purposes	114
Extension of permits already issued	447
Emergency permits, Class B	384
Total	19,721
Total number of permits for street openings	12,506
Grand total of permits issued	<u>32,227</u>

All bonds now in use (excepting those of corporations) are guaranteed by some one of the surety companies authorized to do business in the State of Massachusetts.

There are in force at the present time 1,291 such bonds, and 69 corporation bonds. During the year 1,369 bonds have been cancelled.

NOTICES.

There have been 14,238 notices sent to the various foremen during the year directing them to repair defects in the public streets which had been reported by the police, inspectors and others; also 3,841 notices to departments, corporations and private parties to repair in streets where they had received permits to open or occupy, and to owners of estates where coal-holes or sidewalk lights were defective.

Four thousand three hundred thirty-two notices have been sent to departments, corporations and owners of estates abutting on streets where improvements were about to be made directing changes in their structures. In each case permits have been granted permitting them to do the required work.

INSPECTORS.

All inspectors, excepting those required at the office for emergency work, are located at the various yards of this division the same as last year. They report by mail each day to the Permit Office. Notices are sent out on all their complaints to the proper parties. The inspector is instructed to see that these complaints are properly attended to.

Corporation inspectors remain as in years past, being specially detailed for the purpose, and paid by the corporation to which they are assigned. A daily report is required of each inspector.

EMERGENCY PERMITS.

The conditions of the emergency permit matter have improved, and a very much better showing has been made over that of the year of 1903.

The officials of the departments and corporations realize the importance of making proper use and return of these per-

mits, but are handicapped somewhat by their foremen or laborers who misplace them or do not make proper account of them.

The table below shows the number of permits given to, returned, and unaccounted for by each department and corporation:

	Permits issued.	Permits returned.	Permits on hand.	Permits unac- counted for.
Boston & Maine Railroad.....	12	.....	12	
Boston Elevated Railway Company.....	48	13	35	
Boston Fire Department.....	6	.....	6	
Boston Gas Light Company.....	108	100	8	
Boston Gas Light Company, Service Depart- ment.....	48	44	4	
Boston Pneumatic Transit Company.....	9	5	1	3
Brookline Gas Light Company (Boston Com- pany), main.....	99	74	25	
Brookline Gas Light Company (Boston Com- pany), service.....	24	.....	24	
Brookline Gas Light Company	33	23	9	1
Charlestown Gas and Electric Light.....	39	23	9	1
Dorchester Gas Light Company	132	125	6	1
East Boston Gas Company.....	45	35	10	
Edison Electric Illuminating Company.....	295	277	11	7
Jamaica Plain Gas Company.....	81	81		
Massachusetts Pipe Line Gas Company.....	9	1	8	
New England Telephone and Telegraph Com- pany	21	7	12	2
Quincy Market Cold Storage Company.....	3	.....	3	
Roxbury Gas Light Company.....	207	173	24	10
South Boston Gas Light Company.....	72	60	12	
Water Department (Distribution Division) ..	228	178	44	6
Water Department (Income Division).....	90	80	8	2
Totals.....	1,609	1,299	275	35

ELECTRIC POLES.

There have been permits granted for the erection of 406 new poles and the resetting of 439 old and for the removal of 172 unused poles. All permits for placing new poles have been given as per order of the Board of Aldermen, and plans approved by the Superintendent of Streets; also permits for the removal of poles have been given in accordance with order of the Board of Aldermen or Wire Commissioner. This number includes trolley poles for electric railways.

AREAS UNDER SIDEWALKS.

There have been nine permits granted for areas and bulk-heads under and in the sidewalks on order of the Board of Aldermen.

STREET NUMBERING.

DISTRICT.	Whole Streets Renumbered.	Parts of Streets Numbered.	Estates Numbered.	Numbers Changed.	Figures Supplied.
East Boston.....		8	47	3	137
Charlestown.....	2	4	217	121	731
City Proper.....		27	131	8	295
South Boston.....		21	93	15	263
Dorchester.....	1	39	490	33	1,165
Roxbury.....		19	178	21	472
West Roxbury.....		7	139	4	276
Brighton.....		11	79	2	174
Totals.....	3	136	1,374	207	3,513

Plans for the renumbering of five streets have been prepared.

PROPERTY IN CHARGE OF THE DEPUTY SUPERINTENDENT OF PAVING DIVISION.

Building and wharf on Albany street, opposite Sharon street. The building is of brick and wood, and covers some 8,000 square feet of land, and is divided into a shed for storage, blacksmith's and carpenter's shops, tool-room, and stable. The total contents of the lot, including wharf and buildings, are 63,180 square feet.

Fort Hill wharf, containing 21,054 square feet, placed in charge of the Paving Department May 18, 1874, to be used for the landing and storage of paving blocks and gravel until such time as said wharf shall be wanted for the extension of Oliver street. The greater part of said wharf is occupied by the Sanitary Division as a garbage dump, and the building thereon is leased to a tenant.

Ledge lot on Washington street, corner Dimock street, Roxbury, containing 134,671 square feet. Upon this lot are buildings containing a steam-engine and stone-crusher.

Highland street stable lot. Upon this lot is a large brick stable, erected in 1873, and occupied by the Sanitary and Paving Divisions; also a brick building used as a blacksmith's shop, and a shed for the storage of tools, etc.

Ledge lot on Codman street, Dorchester, containing 299,000 square feet, was purchased in 1870. Upon this lot is a shed containing a steam-engine and stone-crusher, also a stable and tool-house.

On the Almshouse lot, Hancock street, Dorchester, there are two stables, also a shed and tool-house.

Ledge lot on Magnolia street and Bird place, Dorchester, containing 81,068 square feet. This lot was purchased by the town of Dorchester in 1867.

Downer avenue lot, Dorchester, containing 35,300 square feet.

On Child street, West Roxbury, a lot of land containing 43,024 square feet, upon which are a stable and shed, blacksmith's shop and tool-house.

Gravel lot in the town of Milton, on Brush Hill road, containing 64,523 square feet, leased May 13, 1843, by the town of Dorchester for 999 years; also lot of land adjoining, containing about 30,000 square feet, owned by the City of Boston.

Gravel lot on Morton street, Ward 23, containing about one-third of an acre, purchased by the town of West Roxbury in 1870, used for storage purposes.

Ledge and gravel lot, rear of Union street, containing about 37,000 square feet, purchased by the town of Brighton. This lot is at present leased.

Ledge lot on Chestnut Hill avenue, Brighton, containing about thirteen acres, upon which are an office, engine-house, stable, and crusher plant.

On Medford street, Charlestown, a wharf lot, foot of Elm street, containing 8,000 feet, upon which are sheds, office, stable, etc.

In South Boston, corner of H street and Columbia road, stable, carriage-house, shed, tool-house, and office on leased land.

On Hereford street, a yard with shed, tool-house, and office.

Wharf known as Atkin's wharf, 521 Commercial street, purchased in 1887 for \$24,000, containing 22,553 square feet, having on it an office and stable.

On Centre street, West Roxbury, buildings containing engines, stone-crushers, tools, etc., on leased land.

On Rosseter street, Dorchester, buildings containing engines, stone-crushers, tools, etc., on leased land.

On Revere street, wharf for storing paving blocks, etc., on leased land.

Wharf on Chelsea street, East Boston, containing 61,000 square feet, with buildings, purchased in 1897 for \$15,000.

Wharf on East Eagle street, East Boston, known as Glendon wharf, used jointly with Sanitary, Sewer, and Street Cleaning Divisions. Upon this lot are sheds, stable, and offices on leased land.

On Kenney street, Roxbury, buildings containing engines, stone-crushers, tools, etc., on leased land.

On Columbia road, Dorchester, buildings containing engines, stone-crushers, tools, etc., on leased land.

On Hamlin street, South Boston, leased lot used for storage purposes.

On Mt. Vernon street, West Roxbury, yard lot belonging to the Schoolhouse Commission, used for storage purposes.

On Massachusetts avenue, South End, lot used for storage purposes.

On Savin Hill avenue, Dorchester, crushing plant on ledge of John McMorow.

On Heath street, Roxbury, buildings containing engines, stone-crushers, tools, etc., on leased land.

APPENDIX D.

REPORT OF THE DEPUTY SUPERINTENDENT OF THE
SANITARY DIVISION.

ROOMS 917-920 TREMONT BUILDING,
BOSTON, February 1, 1905.

HON. JAMES DONOVAN,

Superintendent of Streets:

DEAR SIR, — The following is the report of the expenditures, income and operation of the Sanitary Division of the Street Department for the year ending January 31, 1905.

Respectfully submitted,

DANIEL P. SULLIVAN,

Deputy Superintendent.

The work of the Sanitary Division includes the removal of house offal, waste and rubbish, and of house dirt and ashes accumulated from the burning of materials for heating buildings and for domestic purposes.

The cost of disposing of refuse collected daily is constantly increasing; owing to the undesirable character of much of it for use as filling, it is difficult to obtain suitable dumping places. The only available dumps are so far distant from the points of collection that the expense of hauling is greatly increased. I would recommend that additional dumping places on the water front be procured so that it may be towed to sea.

All permits for dumping places must be approved by the Board of Health under the following regulations:

Whereas, in the opinion of the Board of Health of the City of Boston the burning in the open air of refuse and waste material of any description within the city limits is attended with noisome odors and dense smoke, and

Whereas, said odors and smoke are in the opinion of said Board liable to cause sickness among the inhabitants of said city.

Ordered, That from and after June 3, 1903, no person shall burn or permit to be burned in the open air any refuse or waste material of any description within the city limits on any land owned by him except in accordance with a written permit from the said Board.

FINANCIAL STATEMENT.

Amount of appropriation	\$653,200 00
Transferred by City Auditor	45,315 89
Amount returned by City Collector	8,014 00
Total amount of appropriation	<u>\$706,529 89</u>

The total expenditure of the Sanitary Division, including work done for other divisions and departments, and paid for by them	\$764,547 21
Less amounts paid by other divisions and depart- ments	58,017 32
Net cost of maintenance, Sanitary Division	<u>\$706,529 89</u>

TOTAL COST OF REMOVAL OF HOUSE DIRT, ASHES, WASTE,
RUBBISH AND HOUSE OFFAL.

Salaries: deputy superintendent, clerks and fore- men	\$16,627 96
Office supplies and expenses	4,394 81
Ashes, waste and rubbish account	422,330 10
House offal account	225,134 26

CONSTRUCTION; REPAIR AND HORSESHOEING
ACCOUNT.

Foreman	1,396 20
Expended for labor	\$34,935 54
Expended for stock	17,416 68
	<u>52,352 22</u>
Allowed time for holidays	\$39,365 41
Medical attendance and allowed time for injured men	2,946 25
	<u>42,311 66</u>

Total expenditures of the Sanitary Division for year ending January 31, 1905	\$764,547 21
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<i>Brought forward</i>	\$764,547 21
REVENUE RECEIVED FROM OUTSIDE DIVISIONS AND DEPARTMENTS FOR BOARD AND CARE OF HORSES, RENT, USE OF DUMPING BOATS, SHOEING, AND FOR REPAIRING VEHICLES, ETC.	
Bridge Division	\$1,039 25
County of Suffolk	1,771 97
Ferry Division	364 60
Lamp Department	387 05
Paving Division	15,785 90
Sewer Division	8,487 35
Street Cleaning Division	28,486 78
Street Watering Division	1,694 42
	<hr/>
	58,017 32
	<hr/>
	<u>\$706,529 89</u>

INCOME.

Amount of money and bills deposited with the City Collector for material sold and work performed by the Sanitary Division of the Street Department during the year ending January 31, 1905.

MONEY DEPOSITED WITH CITY COLLECTOR.

From letting of scow privileges	\$1,931 67
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BILLS DEPOSITED WITH CITY COLLECTOR.

For removal of engine ashes, manure, and rents	13,573 48
	<hr/>
	<u>\$15,505 15</u>

Items of Expenditures and Revenue.

ITEMS.	Total Amount Expended.	Amount Paid by Other Divisions.	Amount Charged to Sanitary Division.
Salaries of deputy and clerks.	\$9,359 29	.....	\$9,359 29
Salaries of foremen.....	8,664 87	\$107 40	8,557 47
Labor, collection and disposi- tion of house dirt and ashes,	196,618 54	33,210 99	163,407 55
Labor, collection and disposi- tion of waste and rubbish..	39,267 77	6,292 82	32,974 95
Labor, collection and disposi- tion of house offal.....	145,262 92	12,745 31	132,517 61
Labor and stock in stables and yards.....	48,775 81	2,659 71	46,116 10
Hired teams on ashes, waste and rubbish and offal.....	49,425 49	.....	49,425 49
Contracts for ashes, West Roxbury, North and South Dorchester.....	16,295 02	.....	16,295 02
Contracts for offal, East Bos- ton, Brighton, West Rox- bury and Dorchester.....	16,757 20	.....	16,757 20
Ash and offal stock.....	782 26	.....	782 26
Allowed time and holidays...	39,365 41	620 68	38,744 73
Grain.....	26,366 47	1,771 97	24,594 50
Hay and straw.....	23,199 23	.....	23,199 23
Medical attendance and al- lowed time on account of injured men.....	2,946 25	.....	2,946 25
Horses.....	24,497 50	.....	24,497 50
Veterinary services and medi- cine.....	6,090 34	.....	6,090 34
Use of hired horses.....	5,991 00	.....	5,991 00
Outside board and care of horses.....	3,701 22	.....	3,701 22
Outside horseshoeing, black- smith, wheelwright, har- ness and painting.....	5,518 77	.....	5,518 77
Labor, stock, etc., wheel- wright, blacksmith, paint, harness and horseshoeing shops.....	52,352 22	608 44	51,743 78
Dumping boats, stock and supplies, etc.....	103 07	.....	103 07
Repairs on stables, sheds and wharves.....	12,389 13	.....	12,389 13
Fuel.....	1,107 50	.....	1,107 50
Gas.....	955 27	.....	955 27
Electric light and power....	1,380 29	.....	1,380 29
Printing, stationery, office items and incidentals.....	4,394 81	.....	4,394 81
Advertising.....	360 78	.....	360 78
Rents.....	16,523 60	.....	16,523 60
Tolls and fares.....	1,085 78	.....	1,085 78
Telephone.....	915 03	.....	915 03
Damages caused by city teams.....	28 37	.....	28 37
Taxes on Hecht's estate as per lease.....	4,066 00	.....	4,066 00
Totals.....	\$764,547 21	\$58,017 32	\$706,529 89

Force Employed on House Dirt and Ashes.

DEPARTMENT FORCE.	No.	Hired Teams.	CONTRACTORS' TEAMS.			
			North Dorchester.	South Dorchester.	West Roxbury.	Totals.
Sub-foremen.	9	.....	.....	.....	.....	9
Inspectors.	14	.....	.....	.....	.....	14
Teamsters.	131	38	6	5	3	183
Helpers.	131	38	7	5	3	184
Dumpers.	29	.....	.....	.....	.....	29
Tallymen.	14	.....	.....	.....	.....	14
Totals.	328	76	13	10	6	433

Amount of House Dirt and Ashes Removed.

YEAR.	Materials.	No. of Loads of 54 cu. ft.
1899.	House dirt and ashes.	329,096
1900.	" " " "	344,682
1901.	" " " "	342,940
1902.	" " " "	313,844
1903.	" " " "	310,509
1904.	" " " "	325,955

Force Employed on Waste and Rubbish.

	Number.
Inspectors.	3
Teamsters.	16
Helpers.	22
Dumpers.	1
Totals.	42

Amount of Waste and Rubbish Removed.

YEAR.	NUMBER OF LOADS.	
	Paper Cart.	Market Wagon.
1899.	14,903	3,020
1900.	11,452	5,494
1901.	11,534	7,791
1902.	10,201	8,297
1903.	8,417	8,753
1904.	7,064	9,170

Force Employed on House Offal.

CITY FORCE.	Number.	Hired Teams.	CONTRACTORS' TEAMS.				
			East Boston.	Brighton.	Dorchester.	West Roxbury.	Totals.
Sub-foremen	5	.....	.....	.....	.....	.....	5
Inspectors	7	.....	.....	.....	.....	.....	7
Teamsters	69	2	6	4	5	2	88
Helpers	69	2	10	5	8	3	97
Dumpers	4	.....	.....	.....	.....	.....	4
Tallymen	2	.....	.....	.....	.....	.....	2
Totals	156	4	16	9	13	5	203

Amount of House Offal Removed.

YEAR.	No. of Loads.
1899	59,956
1900	62,975
1901	66,758
1902	66,287
1903	64,744
1904	64,084

Number of Loads of Material Collected from January 31, 1898,
to February 1, 1905.

YEAR.	Waste and Rubbish.	Ashes.	Offal.	Total Loads.
1899	19,815	329,096	59,956	408,867
1900	18,460	344,682	62,975	426,117
1901	19,325	342,940	66,758	429,023
1902	18,498	313,844	66,287	398,629
1903	17,170	310,509	64,744	392,423
1904	16,234	325,955	64,084	406,273

Material Collected by Districts.

	South Boston.	East Boston.	Charlestown.	Brighton.	West Roxbury.	Dorchester.	Roxbury	South End and Back Bay.	North and West Ends.	Totals.
House dirt and ashes,	23,438	20,799	18,024	15,137	17,020	33,784	53,360	76,651	68,802	327,015
Waste and Rubbish ..	380	.....	196	.....	.....	.....	845	8,894	6,942	17,257
House offal.	3,967	6,294	2,589	1,962	3,047	5,980	9,407	20,228	10,515	63,989
Totals.....	27,785	27,093	20,809	17,099	20,067	39,764	63,612	105,773	86,259	408,261

Number of Carts and Wagons Collecting House Dirt and Ashes, Waste, Rubbish and Offal.

	Iron.	Wooden.	Total.
Offal wagons in use by the Sanitary Division.....	47	35	82
“ “ “ Thomas Mulligan, East Boston.....		7	7
“ “ “ John Newbury, Brighton.....		6	6
“ “ “ M. Crowne & Co., Dorchester.....		13	13
“ “ “ John Krug.....		3	3
Ash carts in use by the Sanitary Division.....		188	188
“ “ “ John J. Moore, West Roxbury.....		3	3
“ “ “ Denis D. Flynn.....		5	5
“ “ “ John D. Lyons.....		6	6
Market wagons in use by the Sanitary Division.....		22	313
Paper carts “ “ “ “ “		32	54
Ash and offal sleds.....			140
Total.....			507

Collected by West Roxbury Contractor.....	7,980 loads of ashes.
“ “ North Dorchester “	20,234 “ “ “
“ “ South “ “	13,550 “ “ “
Total.....	41,764 “ “ “

Collected by East Boston Contractor.....	6,294 loads of offal.
“ “ Brighton “	1,962 “ “ “
“ “ West Roxbury “	1,880 “ “ “
“ “ Dorchester “	5,980 “ “ “
Total.....	15,616 “ “ “

**Final Disposition of all Waste Material by the Sanitary Division
Collected from February 1, 1904, to January 31, 1905.**

	Amount Collected.	Deposited on Low Lands.	Towed to Sea.	Plant of N. E. Sanitary Product Co.	Collected by Contractors.	Plant of City Refuse Utilization Co.	Totals.
House dirt and ashes...	327,015	201,716	83,535	.....	41,764	.....	327,015
Waste and rubbish.	17,257	1,504	.....	.....	.....	15,753	17,257
House offal.....	63,989	.....	.....	48,373	15,616	.....	63,989
Cesspool dirt.....	3,831	.....	3,831	.....	.....	.....	3,831
Street sweepings.....	32,910	.....	32,910	.....	.....	.....	32,910
Totals	445,002	203,220	120,276	48,373	57,380	15,753	445,002

**Amount Expended for the Collection and Disposition of House
Dirt, Ashes, Waste and Rubbish and House Offal, by Dis-
tricts, including Labor and Stock, etc.**

DISTRICTS.	Waste and Rubbish.	Ashes.	Offal.	Totals.
1. South Boston	\$485 00	\$28,194 22	\$14,316 23	\$42,995 45
2. East Boston.....	.....	21,126 22	9,903 60	31,029 82
3. Charlestown	144 00	27,573 33	11,459 89	39,177 22
4. Brighton .....	.....	11,331 69	3,094 01	14,425 70
5. West Roxbury.....	.....	9,197 14	4,338 78	13,535 92
6. Dorchester.....	.....	17,005 38	7,608 96	24,614 34
7. Roxbury.....	1,654 00	77,898 92	36,122 53	115,675 45
8-9. South End and Back Bay.....	12,950 50	104,469 75	48,456 17	165,876 42
10. North and West Ends	10,634 00	73,563 13	27,664 55	111,861 68
11. Dumping boats.....	22,276 89	26,590 24	56,534 90	105,402 03
Totals.....	\$48,144 39	\$396,950 02	\$219,499 62	\$664,594 03

Amount expended for the maintenance of the repair and construction shops	\$58,987 05
Income from outside divisions and departments	22,230 95
Net cost to Sanitary Division	<u>\$36,756 10</u>

Contracts.

OBJECT.	Contractor.	Price per Month.	CONTRACTS.	
			Commence.	End.
Removal of house dirt and ashes:				
Part of West Roxbury	John J. Moore.....	\$225 00	April 10, 1902	April 10, 1905
North Dorchester.	Denis D. Flynn	541 66	April 2, 1902	April 2, 1904
South Dorchester.	John D. Lyons.....	715 00	April 4, 1904	April 4, 1906
Removal of house offal:	Timothy Sullivan Co.	358 33	March 12, 1902	March 12, 1904
East Boston	Denis D. Flynn.....	416 66	March 12, 1904	March 12, 1906
Brighton.....	Thomas Mulligan.....	700 00	Feb. 23, 1904	Feb. 23, 1906
Part of West Roxbury.	Gera F. Farnum, Jr.	166 66	June 10, 1903	May 7, 1904
Dorchester	John Newbury.....	216 66	May 10, 1904	May 10, 1906
Lease of wharf, Atlantic avenue.....	John Krug.....	116 66	April 1, 1903	April 1, 1905
Disposal of house offal.....	Peter J. Allen & Co.	399 16	May 19, 1902	May 19, 1904
Disposal of waste and rubbish.....	M. Crowne & Co.	365 00	June 17, 1904	June 17, 1905
Removal of dead animals.....	Middlesex Trust.....	958 33½	March 1, 1903	March 1, 1908
	Heirs of Henry C. Snow	333 33	July 1, 1900	July 1, 1905
	New England Sanitary Product Co.	4,366 66½	Nov. 7, 1901	Jan. 1, 1912
	City Refuse Utilization Co.	458 33½	Dec. 1, 1898	Dec. 1, 1908
	N. Ward Co.	No charge.	Nov. 9, 1901	Jan. 1, 1912

Material Sold by Contract.

OBJECT.	Contractor.	Price per Year.	Bills Submitted to City Collector.
Manure of horses at South and South Boston Yards.....	J. N. Smith.....	\$1 00 a horse.	\$123 74
Manure of horses at West and Charlestown Yards.....	George P. Winn.....	1 00 a horse.	122 33
Manure of horses at Highland Yard.....	Joseph A. Kelley	1 00 a horse.	22 41
			\$268 48

MAINTENANCE OF FORT HILL WHARF AND DUMPING-BOATS.

Amount Expended.

For towing by department tow-boats	\$6,544 77	
For towing by hired tow-boats	807 50	
	<hr/>	\$7,352 27
For repairs on wharves and boats		10,070 07
For rents	\$4,000 00	
For dumping-boat stock and supplies	379 66	
For labor, messengers, crew and dumpers	9,695 65	
For holidays and allowed time, injured men	438 38	
	<hr/>	14,513 69
		<hr/>
		<u>\$31,936 03</u>

Number of trips to sea by department tow-boats	333
Number of trips to sea by hired boats	17
	<hr/>
	<u>350</u>

Number of scows to sea, 359.

COST PER LOAD, INCLUDING RENTS, ETC., OF TOWING TO SEA
WASTE MATERIAL BELONGING TO THIS AND OTHER DIVISIONS.

The number of loads waste material carried to sea, 120,276	
The cost per cart load . . . . .	.2655 cents
The cost per boat load	\$86 17

DIVISION CONSTRUCTION, REPAIR AND HORSESHOEING
SHOPS.

An extensive plant is located at the South yard, 650 Albany street, opposite East Newton street, where the construction of and repairs on street and other department carriages, carts, wagons, etc., are made, together with the painting of the same. Harnesses are repaired and many are manufactured, horseshoeing done, and all street signs are painted for the Paving Division.

For work done and materials furnished for outside divisions and departments, the different shops received as follows:

Wheelwright shop	\$4,275 05	
Blacksmith shop, South End	7,271 68	
Blacksmith shop, West End	753 42	
Paint shop	4,027 32	
Harness shop	2,538 81	
Horseshoeing shop, South End	1,674 00	
Horseshoeing shop, West End	1,690 67	
	<hr/>	\$22,230 95

For work done and material furnished for the Sanitary Division, the following amounts were expended by the different shops:

Wheelwright shop	\$7,609 22	
Blacksmith shop, South End	6,857 54	
Blacksmith shop, West End	917 46	
Paint shop	6,144 87	
Harness shop	6,792 34	
Horseshoeing shop, South End	2,612 69	
Horseshoeing shop, West End	141 43	
	<hr/>	31,075 55

Total amount paid out, stock and labor, all divisions and departments		\$53,306 50
Foreman in charge	\$1,396 20	
Allowed time	4,284 35	
	<hr/>	5,680 55
		<hr/>
		<u>\$58,987 05</u>

Cost of Horseshoeing.

	Division Shops.	Outside Shops.
Stock.....	\$2,016 85	\$3,335 40
Labor	4,078 63	.....
	<hr/>	<hr/>
	\$6,095 48	\$3,335 40

Horseshoeing for Divisions.

KIND AND STYLE.	Sanitary Division.	Street Cleaning Division.	Sewer Division.	Paving Division.	Street Watering Division.	Central Office.	County of Suffolk.	Lamp Department.	Totals.
New shoes.....	7,338	3,083	988	377	4	161	149	40	12,140
Bar shoes	101	30	78	2	.....	8	3	.....	222
Leathers	4,202	1,416	433	153	2	4	69	14	6,293
Resets.....	955	596	265	49	.....	4	56	3	1,928
Pads.....	110	23	16	50	.....	120	6	.....	325
Springs.....	6	.....	4	2	.....	.....	.....	.....	12

Average cost per shoe, 35 cents.

DETAILED ACCOUNT OF AMOUNT PAID FOR WORK DONE BY THE
SANITARY DIVISION FOR OTHER DIVISIONS OF THE STREET
DEPARTMENT AND OTHER DEPARTMENTS.

For repair and construction work . . .	\$19,314 48
For horseshoeing	3,479 42
For use of dumping boats	9,079 50
For hay, grain, straw, board and care of horses . . .	5,620 21
For feeders, watchmen, and stablemen	1,893 11
For fuel, light, and telephone	663 70
For board and care of sick horses at Veterinary hospital	1,965 70
For rent for use of Litchfield's Wharf	5,200 00
For new horses	10,652 18
For miscellaneous items	149 02
	<u>\$58,017 32</u>

LAND AND BUILDINGS IN CHARGE OF THE SANITARY
DIVISION.*South Boston Stable. (Leased.)*

Stables and sheds, with accommodations for nineteen horses, located at 317 and 319 First street, South Boston.

East Boston Stable. (Leased.)

Stables and shed, with accommodations for fifteen horses, located at 324 East Eagle street, and occupied jointly by Paving, Sewer, Street Cleaning, and Sanitary Divisions.

Charlestown Stable.

With accommodations for twenty-five horses, situated on Rutherford avenue; lot contains 17,300 square feet of land; stable built in 1875, cost \$5,083.07; sheds and outbuildings built in 1879.

Brighton.

Accommodation is provided by the Sewer Division at its stable on Western avenue for five horses of the Sanitary Division.

Highland Stable.

With accommodations for seventy-two horses on the old Almshouse lot, Highland street, containing 81,082 square feet. A part of this stable and adjoining lot is used by the Paving Division. There is on this lot a brick stable, built in 1878, which cost \$88,594.13. On this lot is an offal-shed, erected in 1875, at a cost of \$1,160.12. This offal-shed was abandoned on April 1, 1897, and in 1900 part of it was remodelled, and is now used as a carriage-house and wash-room.

South City Stables, Shops and Sheds.

Situated on Albany street, opposite Newton street. The lot belonged to the city before being used for this purpose, and contains 90,780 square feet of land.

The stables and buildings connected therewith are of brick. There are also on the premises five wooden sheds, used for storing wagons, etc. The stable is two stories high, with French roof, and has accommodations for one hundred horses. Twenty-three horses are kept in sheds. Total original cost, exclusive of land, \$79,089.23. In 1899, a Veterinary hospital was built and equipped for the purpose of caring for sick and disabled horses.

Connected with stables are blacksmith, wheelwright, paint and harnessmaker's shops, in which wagons, carts, harnesses, etc., used by this and other departments, are constructed and kept in repair, also a horseshoeing shop for shoeing the horses of the department located in this section of the city.

West Stables and Sheds.

The stable is a brick building, a story and a half high, 128 feet by 50 feet, located on North Grove street; built in 1860 without buildings attached to same. It has accommodations for 90 horses in stables and sheds. The lot contains about

45,152 square feet. On May 11, 1896, a horseshoeing shop was established for the purpose of shoeing horses of the department stabled in this section of the city.

Fort Hill Wharf.

Containing 21,054 square feet, placed in charge of the Sanitary Division; used as a dumping station for the city's garbage and refuse, and as a mooring place for dumping boats and scows, which convey this material to sea and to the plant of the New England Sanitary Product Company. Cost of constructing platform and dredging dock, \$6,219.33. There are three Barney dumping boats which are in continual use, and are towed to sea by the department tugboat "Cormorant."

A portion of this wharf is used by the Street Cleaning Division as a locker for patrol push-carts, etc., and a part is in use by the Paving Division.

Packard's Wharf. (Leased.)

Situated at 464 Atlantic avenue; used as a berth for dumping boats in connection with Fort Hill Wharf. Leased from the heirs of Henry C. Snow.

Litchfield's Wharf. (Leased.)

Situated at 466 to 470 Atlantic avenue, containing about 35,460 square feet. Leased from Jacob H. Hecht, March 1, 1898, for a period of ten years. This wharf adjoins Fort Hill Wharf, and is occupied in part by the New England Sanitary Product Company as a berth for their scows, and also by the buildings of the City Refuse Utilization Company for the disposal of waste and rubbish. This property is now owned by the Middlesex Trust.

APPENDIX E.

REPORT OF THE DEPUTY SUPERINTENDENT OF THE
SEWER DIVISION.

30 TREMONT STREET, BOSTON, February 1, 1905.

HON. JAMES DONOVAN,

Superintendent of Streets :

DEAR SIR, — I respectfully submit report of expenses, income and operation of the Sewer Division for the financial year ending January 31, 1905.

The work of converting combined to separate system in the North Metropolitan district, mentioned in the last annual report as having been begun under chapter 383 of the Acts of 1903, has been vigorously carried on, contracts made last year on the high level branch intercepting sewers having been finished, and as much work done in the separation of the common systems as the limited time would allow, the new loan not having been made available until October.

The separation of the system in the Lauriat avenue district and in the Talbot avenue district west of Bernard street has been completed ; and in the Back Bay and Roxbury, the Smith street and Longwood avenue districts, about 80 per cent. of the work of conversion has been completed.

The bill mentioned in last year's report as having been introduced upon petition of His Honor the Mayor for the purpose of providing funds for converting combined to separate systems in the Back Bay as an alternative to the construction of the marginal conduit, was passed by both branches of the Legislature and sent up to the Governor.

The Charles River Basin Commission not having concluded at this time to meet the Mayor's views, namely that the separation of these systems were preferable to the building of the marginal conduit, and not having proposed any modification of the marginal conduit scheme, at least so far as the Mayor had any knowledge, the bill was vetoed by the Governor upon the request of the Mayor.

The works of magnitude which should be undertaken by this division in the immediate future are as follows:

REBUILDING OF THE OLD CHANNEL OF STONY BROOK.

This old stone structure, partly a loose stone arch, partly a square section covered with horizontal covering stones, is the original channel of Stony Brook, running from near Roxbury Crossing, across Linden Park and Vernon streets, through Whittier street and Rogers avenue, to the Back Bay Fens. This is in a general state of dilapidation. Any portion of it is liable to break down at any time, letting down the surface of the streets which overlie it, and resulting in serious damage. There have been several cave-ins already. In order to prevent a general break down, it has been braced up in numerous places with upright timbering. These timber uprights form obstructions and aggravate the accumulation of filth and sewage matter. In addition to this structural weakness, it is in the most unsanitary condition imaginable. It should be rebuilt throughout its entire length, both for safety of street travel and for sanitary reasons. The estimated cost of this improvement is \$300,000. The subject has been discussed in annual reports for many years past, but has not been undertaken on account of the cost. The rational method of procedure would be to spend a given amount, say \$50,000 a year, on this rebuilding until it is completed.

THE AUXILIARY EAST SIDE INTERCEPTING SEWER.

This intercepting sewer from Central street to Lehigh street has become too small for the flow which it now has to take. The sewer is nearly or quite full even in the driest times, and the result is that it overflows at low tide through many of the overflow outlets and befouls the docks with sewage matter. It cannot be rebuilt on its present location on account of the fact that so much of it is covered by the Terminal Station railroad yards, but a new route has been selected running around this obstruction. A temporary amelioration can be accomplished to a limited extent by building dams and raising the height at which overflows take place; but not much can be done in this line without danger of obstructing the overflows so as to cause floodings of cellars throughout the business district. The East Side interceptor and the Canal-street relief sewer, which connects with it, are so full almost all the time that it is only with the

greatest difficulty that connections can be made. The radical remedy is to build an auxiliary sewer to help out the obstructed portion of the sewer described above. The whole cost of this work is estimated at \$230,000. This is too much to be done in any one year, together with all the work which the department has to undertake, but, like the preceding work, a certain amount might be done each year, say \$100,000 worth, so that relief may be obtained in a couple of years.

THE EXTENSION OF STONY BROOK CONDUIT SOUTHWARD FROM JAMAICA PLAIN.

This conduit must be extended to Forest Hills or a point a few hundred feet south of Forest Hills during the immediate future, after which it may be allowed to rest, inasmuch as a free outlet at this place would probably prevent serious flooding in the meadows beyond. Some other scheme which is less expensive may perhaps be devised, such as an open channel enclosed by a strip of varying width which might be converted into a park, but a covered channel is a necessity as far as Forest Hills. This channel carries with it a sewer at a lower grade than the existing main sewer of the valley, which will afford a sewer outlet to Washington street, Williams street, Keyes street, and adjacent territory which cannot now be sewered into the existing main sewer. The total cost of this improvement is about \$900,000, but it can be done by yearly instalments of say \$150,000. This work has rested at Green street now for several years and there is a crying necessity for its resumption.

KING'S MILL POND.

This is a tidal outlet through the marsh for Tenean Creek. This conduit which now empties into the mill pond at Brooks street brings down more or less sewerage from overflows of the common sewer system throughout its drainage area, and the pond has become a nuisance, and has been so for many years. There has been a project for digging an open channel and making a water park of this place, but it does not seem advisable. There would be as much difficulty in preserving the purity of the waters as there has been in the Back Bay Fens, and from its proximity to the water front there does not seem to be reason enough for the construction of a water park. The best plan would be to build a covered channel as far as Mill street. This work has been estimated at \$125,000.

All of the foregoing work will have to be charged to the annual million dollar loan for sewerage works.

The large work to be done out of the separation fund is the extension of the high level branch interceptors, of which many miles remain to be built, the rebuilding of Maywood's Brook and Dorchester Brook sewer systems, of which mention will be made later, and the separation of the common sewer system throughout the Metropolitan district.

A general statement of the most important work done by the division during the year, accompanied with recommendations as to work for the coming year, is given in the succeeding pages and is classified according to districts.

EAST BOSTON.

There have been built in this district during the year :

1,691.47	linear feet	brick sewer.		
2,312.92	"	"	pipe	"
243.73	"	"	wood	"
72.30	"	"	brick surface drain.	
1,436.50	"	"	pipe	"

Total, 5,756.92 " " = 1.09 miles.

The most important of this is the East Boston low level sewer in Addison street and a part of Kneller street, 1,170 linear feet of which was built in tunnel; also a section of the low level sewer under Boston, Revere Beach & Lynn Railroad, between Bennington street and Butler avenue. The Lexington street outlet was rebuilt of a permanent size, 3-foot circular wood, and in a new location, and outlet sewers for Parkway lands, so called, were started in Prescott and Frankfort streets. A 5-foot by 5-foot brick culvert was built under the Boston & Maine Railroad about 1,300 feet from Addison street, which gives additional tidal flow to and from the basin bounded by the Boston & Maine Railroad, Addison street, Saratoga street, and Boardman street.

RECOMMENDATIONS.

The East Boston low level sewer should be completed from Addison street through Kneller, Boardman and Saratoga streets to Bennington street, thus affording an outlet for the sewers already built in Bennington street, from Saratoga street to Boston, Revere Beach & Lynn Railroad. This will require about 3,000 linear feet of 3-foot by 4-foot 6-inch and 3-foot brick sewer.

Another section of the low level sewer for which there is urgent need will lie between Butler avenue and Leverett avenue, and when built will afford an outlet for the existing sewers in Bennington street, between the Boston, Revere Beach & Lynn Railroad and Leverett avenue. To build this section will require about 2,400 linear feet of 3-foot and 2-foot by 3-foot brick sewer. The above would complete the East Boston low level sewer.

The separation of the systems on that portion of the high ground on Breed's Island, which has already been sewered, should be completed, and the Moore street interceptor, between Kneller street and the Moore street outlet, should be begun early in the season and pushed to completion as rapidly as possible, in order to do away with the nuisance caused by deposit of sewage on the flats at foot of Moore street. This interceptor will require about 4,400 linear feet of 20-inch and 24-inch pipe.

It is also desirable to build an interceptor along the north-erly side of East Boston, from Eagle square to Putnam street, to intercept the sewage from the Putnam street and the Glendon street outlets. These sewers now flow into Chelsea Creek, but a deposit is left on the flats at low water, which is the cause of complaint. This will require about 2,650 linear feet of 12-inch and 15-inch pipe.

The sewer in Prescott street, between Bremen and Frankfort streets, should be completed; and the sewers built in Prescott street, from Frankfort street to Cleveland street, in Parkway, from Bennington street to Cleveland street, and in Frankfort street, from Parkway to Swift street.

CHARLESTOWN.

During the year there have been built in this district:

222.90	linear feet	brick sewer
777.60	" "	pipe "
267.30	" "	concrete and steel sewer.
363.03	" "	pipe surface drain.

Total, 1,630.83 " " = 0.31 miles.

The most important of this was the rebuilding of part of the Rutherford avenue outlet, from Rutherford avenue about 300 feet southwesterly, and the starting of the separation of the Vine street district sewer system. The connection with the Metropolitan sewer at Warren street has been made, thus completing the connection of the Charlestown sewerage system with the Metropolitan sewer.

RECOMMENDATIONS.

The separation of the Vine street sewerage system should be continued by building new pipe sewers in Bunker Hill street, from Chelsea street to Vine street, and in Moulton, Decatur, Corey and Tufts streets.

The rebuilding of the Rutherford avenue outlet should be continued to tide-water. This will require about 1,300 linear feet of 6-foot by 7-foot concrete sewer or its equivalent, which should be built at a grade about 2.5 lower than the existing outlet in order to allow a free flow.

The existing sewer in Rutherford avenue should be rebuilt from the outlet to Middlesex street.

BRIGHTON.

During the year there have been built:

	1,993.20	linear feet of pipe sewer.
	4,739.26	“ “ surface drain.
<hr/>		
Total,	6,732.46	“ “ or 1.28 miles.

The most important work done was the building of separate system sewers in Brooks and Parkman streets, and the new connection with the Metropolitan sewer at Brooks street. This has completed the separation of the sewerage system on Bigelow Hill, so that only house sewage enters the Metropolitan sewer from this territory, and all the surface drainage is carried to Charles river. A surface drain was also built in Nonantum street, from Oak square to Newton line.

RECOMMENDATIONS.

The Shepard brook conduit should be built from Faneuil Valley brook, near North Beacon street, to Shannon street. This will require about 5,200 linear feet of 6-foot, 5-foot, 4-foot, 3-foot 6-inch and 3-foot brick conduit, and is greatly needed to relieve the congested condition of sewers in the Market street district in time of storm. There has been a crying need for this conduit for several years, and as the cellars in this territory are flooded at every heavy rain there is a liability of suits for damage if some relief is not afforded.

The Everett street overflow outlet should be rebuilt from Charles river, across Metropolitan parkway to Western avenue, in order to relieve sewers in Western avenue and vicinity, which are gorged at every heavy rainfall, and cause

the flooding of numerous cellars. This would require about 940 linear feet of 5-foot 9-inch circular brick sewer. Surface drains should be built in Sutherland and Lanark roads, in Warren street, between Commonwealth avenue and Brookline line, and in Allston street, between Commonwealth avenue and Summit avenue.

WEST ROXBURY.

There have been built during the year:

6,289.00	linear feet	brick sewer.
16,913.27	" "	pipe "
4,049.26	" "	" house drain.
1,066.01	" "	brick surface drain.
39.50	" "	" and stone surface drain.
23,469.33	" "	pipe surface drain.
397.54	" "	concrete surface drain.
<hr/>		
Total	52,223.91	" " = 9.89 miles.

The most important work done during the year was the building of a complete sewerage system in Belgrade avenue, between Corinth street and Colberg avenue, and the beginning of a drainage system in Belgrade avenue, from Colberg avenue to Anawan avenue; complete sewerage systems in Hyde Park avenue, between Lower Walk Hill street and Ashland street; the construction of Talbot avenue high level sewer, from Ashland street to 1,825 feet east of Walk Hill street; sewerage systems for Rowe and Sharon streets and outlet. The brook lying between Rowe and Sharon streets has been taken into a covered conduit and carried under the New York, New Haven & Hartford Railroad and Hyde Park avenue, and down Hadwin Way to Stony Brook.

RECOMMENDATIONS.

Talbot avenue high level sewer should be completed in West Roxbury from its present end, about 1,825 feet east of Walk Hill street to Morton street, requiring about 1,570 linear feet of 4-foot 3-inch circular brick sewer.

There is urgent need for sewers in Addington, Dunbar and adjacent streets to afford relief from the present unhealthy conditions existing in this locality due to the overflowing of cesspools. The nature of the soil is such that the liquid matter does not leach off from the cesspools, but fills them to the top and flows off over the surface. These streets will require about 7,000 linear feet of 12-inch pipe sewer.

Neponset avenue and Mt. Hope street, between Hyde Park avenue and Stony Brook, as well as Jewett and Folsom streets, which extend from Neponset avenue to Mt. Hope street, are quite closely built upon. On account of the impervious character of the soil the cesspools in this neighborhood constantly overflow and create a nuisance, which in warm weather becomes almost unbearable. This is part of an area which will eventually be drained by the West Roxbury low level sewer to be built up the valley of Stony Brook in connection with the permanent improvement of the brook. As it is very uncertain when this improvement will be brought up to this point, a sewer should be built during the coming year in Neponset avenue, between Hyde Park avenue and Stony Brook. This can have an outlet through private land to Mt. Hope street and easterly in Mt. Hope street to the Talbot avenue high level sewer, which connects with the Metropolitan high level sewer near the junction of Ashland and Canterbury streets. Part of this sewer and outlet will be only temporary, but it will relieve the existing unsanitary conditions until the West Roxbury low level sewer is built, which may not be for a period of ten years or more.

There have been many requests for sewers in Poplar street, between Canterbury and James streets, and in James and Beech streets, between Poplar and Kittredge streets. These sewers are needed, but an outlet must first be built for them in Canterbury street, Hyde Park avenue, private land, Clifford street and Canterbury street, between the Metropolitan sewer and Poplar street. This will require about 2,600 linear feet 24-inch pipe.

Sewers have been petitioned for, and are badly needed, in Spring street, between Charles River and Gardner street, in Montclair avenue, Brookfield street, Robin street and Wachusett street.

The Roslindale branch of Stony Brook should be built of a permanent size from Cohasset street to Linden street, requiring 900 linear feet 9-foot circular concrete conduit, and the brook above this point should be improved by deepening the channel, building stone sidewalls, and placing permanent culverts under the cross streets from Linden street to Belgrade avenue. This improvement is particularly important in order to provide a satisfactory outlet for the surface drainage system, now being built in Belgrade avenue, between Colberg and Anawan avenues. It is likewise desirable to deepen the channel and wall in the sides of this brook in the land of the New York, New

Haven & Hartford Railroad Company, Providence Division, from the point where it leaves Belgrade avenue to Anawan avenue. This will give a free outlet for the Central Station branch, which must be built at an early date in Anawan avenue, Beech street, Clement avenue, private land, railroad and Corey streets to Centre street, in order to afford an outlet for the surface water from a large territory, which is now causing numerous complaints from the property owners.

A surface drain is an absolute necessity in Penfield and Houston streets to afford an outlet to surface drains and catch-basins already built in Belgrade avenue between Dudley avenue and Linden street.

Many complaints are received every year regarding the condition in time of storm of Poplar street near Hillside avenue; also regarding the brook which has its source a little above this point and flows down across Poplar, Ashland, Sycamore and Florence streets, connecting with the Roslindale branch near Florence street. These complainants can and should be satisfied, and the existing evil conditions remedied by building the proposed Florence-street brook conduit from Roslindale branch of Stony Brook to Poplar street. Part of this will lie in public streets, and part along the present course of the brook in private land, and will require about 4,000 linear feet of 5-foot 9-inch, 5-foot, 4-foot 6-inch, 4-foot, and 3-foot 6-inch conduit.

Property between Ashland and Gilman streets is flooded every spring, causing serious annoyance and expense to the owners. This trouble can be remedied by building 360 linear feet of 18-inch and 24-inch pipe surface drain.

Surface drains are needed in Boylston street, between Lamartine street and Chestnut avenue, and between Stony Brook and Washington street, to relieve the overcrowded condition of the sewers in this vicinity.

SOUTH DORCHESTER.

During the year there have been built in this district:

7,864.89	linear feet	pipe sewer.
2,622.72	"	" brick sewer.
2,230	"	" brick surface drain.
11,818.58	"	" pipe surface drain.

Total, 24,536.19 " " = 4.65 miles.

The most important work started during the past year was the construction of 2,622 linear feet of 4-foot 9-inch circular

brick sewer on the Dorchester high level sewer in River street, between the Hyde Park line and Fremont street. This sewer will drain about 1,100 acres of high level territory, and is to be extended through Mattapan, Dorchester Lower Mills and Ashmont to Meeting House Hill. This channel will vary in size from a 4-foot 9-inch circular brick channel to a 2-foot 6-inch circular brick channel, and will cost in the neighborhood of \$500,000.

A start has also been made on the Talbot avenue high level sewer and the improvement of the Canterbury branch of Stony Brook — both of these channels to be carried in one trench; and although no actual construction can be charged to this item, about 100 feet of trench has been excavated to grade.

The most important brook improvements are as follows:

The building of a covered channel for Oakland Brook, between the New York, New Haven & Hartford Railroad and Bismarck street, where 100 linear feet of 8-foot 6-inch by 5-foot 3-inch brick conduit, and 923 linear feet of 5-foot 9-inch circular brick conduit were constructed.

In Lucerne street, between Lauriat avenue and Morton street, 711 linear feet of 3-foot 6-inch circular brick conduit on the improvement of a branch of the Canterbury branch of Stony Brook were built.

The building of a brick conduit in Armandine street, on the Davenport Brook, was completed, and this improvement will remove the cause of much flooding.

In the locality known as the "Vose's Grove District" 1,145 linear feet of pipe sewer were built which has been repeatedly called for, and the improvement will remove a long-standing nuisance.

In the Cedar Grove district 2,217 feet of pipe sewer were built, thereby doing away with the cesspools in a fine residential district.

Sewers were built in Rockville street, Woolson street, Flint street, Greenock street, and a start was made on the sewer in Richmond street, between Dorchester avenue and Washington street — all of this work having been repeatedly called for by petition.

RECOMMENDATIONS.

The most important work contemplated in South Dorchester during the coming year is the extension of the Dorchester high level sewer, from the end of the present channel in River street, near Fremont street, to Park street; also the

completion of the Talbot avenue high level intercepting sewer, just started, from Morton street to Talbot avenue. This latter interceptor when completed will relieve a large area around Lauriat avenue and Talbot avenue, which is flooded after every heavy rainfall. In connection with this the building of a 10-foot circular brick conduit or its equivalent from the end of the present channel in Callender street, at Don street, to Harvard street is contemplated.

As provided for by the Separate Systems Act, consideration will also be given to the many streets in which the house sewers are overcrowded by reason of the catch-basins being connected with the same.

Plans have been made for the improvement of the brook course in the vicinity of Monson, Sturbridge and Sanford streets, from which complaints are received after every storm.

The improvement of Mattapan brook from the New York, New Haven & Hartford Railroad to Norfolk street should receive attention, as this brook course is the outlet for surface water from a large portion of Blue Hill avenue.

Oakland brook, between the Neponset river and River street, is also worthy of consideration, as in all probability the department will be called upon this year to provide catch-basins and catch-basin drains for River street from the Hyde Park line to Mattapan square, and as Oakland brook will be the outlet for these drains the present channel should be extended to the Neponset river.

Petitions have also been received for sewers in Norwood street, Dorchester avenue, from Richmond street to St. Gregory's Church, Walk Hill street, Groveland street, Fuller street and many others — all of which are very important from a sanitary point of view.

NORTH DORCHESTER.

There have been built in this district during the past year :

1,935.71	linear feet	pipe house sewer.
1,128.59	“ “	brick surface drain.
5,529.09	“ “	pipe surface drain.

Total, 8,593.39 “ “ = 1.63 miles.

The principal items of construction work completed are :

Separate system of drainage in the Harvard street district. This has been recommended annually for many years, and now that it is completed it is the means of abating numerous floodings of private estates.

Normandy street surface drain. This drain takes the surface water from the old Geneva avenue brook course, and abates the flooding between Devon street and Wilder street.

Freeport street brook. This work was completed during the past year from tide-water to a point near Bowdoin street to more adequately care for the waters of this brook. Floodings continued to occur at the corner of High street and Hancock street, rendering extension of this work absolutely necessary.

New house sewers have been built in Buttonwood court, Willow court, Field's court, Highland street and Clapp place.

Surface drains have been constructed in Washington street, between Bowdoin street and Erie street, West Park street, Bowdoin avenue, Esmond street, Thane street and several other smaller streets.

RECOMMENDATIONS.

Freeport street brook. The remaining link in this work, between High street and Bowdoin street, should be completed during the coming year in order to adequately care for the proposed extensions above this point.

The Coleman street branch of the Freeport street brook should be built from the main channel, near the corner of Bowdoin street and Hancock street, to Quincy street. Extensive floodings occur here after nearly every heavy rain, owing to the small trunk sewer which passes through Draper court and Bowdoin street not being able to take even a moderate storm flow.

Tenean creek, between Westville street and Speedwell street. This will take the flow from the Homes avenue surface drain, which is now broken down, has no outlet, and the water from which floods Homes avenue after every storm. The many estates bordering on this old brook course are damaged considerably from every storm, and have often petitioned for this improvement.

The conduit will also serve as an overflow for the overcrowded sewers in this locality.

Franklin Park brook, from Harvard street to Blue Hill avenue. This is the only uncompleted portion on the line of the Franklin Park brook, and, as the present open water course serves as an overflow for the Blue Hill avenue system of house sewers, this portion should be built during the coming year.

Faxon street, between the New York, New Haven & Hartford Railroad, Midland Division, and Washington street. This is needed as an outlet for the extensive system of

surface drains completed in this district during the previous year, and as an overflow to relieve the overcrowded Washington street common sewer. It will probably be necessary here to continue this conduit from Faxon street down Kilton street to a point near Harvard street, where the present surface drain now crosses the railroad.

Oakland Garden fork, Canterbury branch of Stony Brook. This conduit should be extended from its present terminus in private land, off Greenwood street, near Harvard street, down Standish street, thence via West Park street and Bernard street to Franklin Field. This is an expensive piece of work, and will require considerable time in which to complete it; and, as the plans for construction are all ready, work should be commenced here at the earliest opportunity, as damages have already been paid as a result of floodings from this drain, and the present inconvenience to the railroad people at the Harvard street station is considerable.

Dorchester brook, main sewer. Abutters along this line have been damaged by overflow of sewage for several years past, and the improvement of this sewer has been recommended many times.

The problem has now changed considerably, since the new Roxbury high level sewer will, in all probability, be extended into Dorchester to take in this sewer some time in the future. As the line is very long and a difficult one to construct, no relief is in sight for this territory, unless a start is made on the Roxbury high level sewer during the coming year.

Dorchester high level sewer. This sewer enters the North Dorchester area at Park street, near Greenbrier street, and while it is greatly needed as a relief for the main sewers like Geneva avenue, Coleman street, and Ceylon street, little can be accomplished this year, except to make final studies and prepare the detail plan of construction.

Shamrock street outlet. The entire system of sewers drained by this outlet should be rebuilt, and an extensive system of surface drains established. Many of these sewers are too high and much too small, and they are so broken down and generally dilapidated that it is found very difficult to keep them in operation.

Overflow at East Park street, near Harrison square. This overflow is built of wood and discharges into Tenean creek, but having no tidegates to prevent the backing up of tide-water, must contribute water to the system of common sewers at high tide.

Carson street. There are many cellars on this street flooded when a storm occurs at high tide, and while several

of these cellars are below the legal grade (Grade 12), still some means should be provided for their relief. If the roof water leaders from these houses were connected with the surface drain and a small regulator placed on the common sewer, near its connection with the Dorchester interceptor in Crescent avenue, floodings might be abated.

Tonawanda street surface drain. This drain should be lowered from a point in Tonawanda street across private land, Lindsey street and Stratford street to Park street. This drain was built by private parties, but is now being used by the city to take the storm water from a considerable area. On account of being laid with open joints it is now too high and full of sand to satisfactorily serve this district. A petition has been received for placing it in another location; that is, the portion between Tonawanda and Lindsey streets.

House sewers should also be constructed in private land, between Moseley street and Columbia road; Baker court, from Willow court easterly; Willow court, from existing sewer to Boston street; Dorchester avenue, from Freeport street to Linden street; Dorchester avenue, from Kimball street to Linden street, and Payson avenue, from Glendale street northerly.

Surface drains should be constructed in Magnolia street, from Dudley street to Magnolia square; East Cottage street, from Norfolk avenue to the railroad; Stanwood street, from Blue Hill avenue to Columbia road; Devon street, from Blue Hill avenue to Columbia road; Geneva avenue, from Normandy street to Blue Hill avenue, and many other portions in the Dorchester high level area.

SOUTH ROXBURY.

There have been built in this district during the past year:

100.86	linear feet brick sewer.
3,400.67	“ “ pipe
665.82	“ “ brick surface drain.
16,283.88	“ “ pipe surface drain.

Total, 20,451.23 “ “ = 3.87 miles.

The principal works completed in this district are:

Maywood's Brook conduit. The construction of this conduit has been carried on throughout the year in Hampshire and Ruggles streets. This conduit is 11 feet wide by 7 feet 6 inches high and is built to carry surface water only, draining about 350 acres in Roxbury. Two new house

sewers are being carried along with the conduit to take the sewage only from this area. The house sewers empty into the Cabot street interceptor, while the surface water goes into Stony Brook channel in Whittier street. This eventually reaches the Charles river by way of the Back Bay Fens, and is really a part of and in harmony with the construction carried on there for the removal of pollution from the Back Bay Fens and from Charles river above the proposed dam. This work is the most important piece of work undertaken by the Sewer Division in Roxbury in many years, and while already it is affording relief for the flooded estates on Ruggles and adjoining streets, it renders possible the construction of new sewers and drains in such streets as Warwick street, Haskins street, Westminster street and other streets in this low-lying area, which would otherwise be without adequate drainage for many years.

This brook derives its name from the district known as the May Woods, now occupied by such streets as Maywood street, Edgewood street, and Woodbine street, Roxbury. These woods were formerly the head-waters of the channel heretofore known as the Bower and Sherman streets main trunk sewer. The entire area drained by the brook course before it reaches Stony Brook channel in Whittier street consists of 350 acres, and extends from Whittier street to the junction of Warren street and Elm Hill avenue, a distance of 1.8 miles.

The main line which now passes down Warren, Bower, Sherman, Ottawa, Laurel, Dale, Regent, Ray, Circuit and Washington streets to Guild row, and Shawmut avenue to Ruggles street, is much too small throughout its entire length. This is shown in a comparison of its present maximum size, 3 feet by 5 feet 6 inches, with the size now building, 11 feet by 7 feet 6 inches, or the equivalent of a circle 9 feet 1 inch in diameter. Sanitary conditions along Bower, Sherman, Ottawa and Laurel streets have been well nigh intolerable for many years, and much valuable property has been rendered practically untenable.

The constant floodings along other portions of this line have also been the cause of volumes of complaints, which the department has been powerless to help. Starting, as we have, at the lower or outlet end of the line, the conduit is designed large enough to take all the storm water from this immense area and deliver the same to Stony Brook. Progress has been as rapid as is commensurate with such heavy work, and construction must still be pushed forward materially within the next two years before any adequate relief

can be afforded the upper regions, which are the most affected.

Hammond street, from Tremont street to Shawmut avenue. Petitions for better sewerage facilities in this street have been received from the abutting property owners at intervals for about fifteen years, and in every instance the starting of work has been recommended. This division has already built a new sewer, of larger size and at a much lower grade, between Tremont and Westminster streets, and the same will be extended in the near future as far as Shawmut avenue. Abutters have readily taken advantage of this new sewer by connecting their houses with the same, and it is the intention to use this new sewer for house sewage only and utilize the old sewer for surface drainage.

Crawford street. A separate system of drainage has been established in Crawford street, between Walnut avenue and Warren street. This necessitated the building of a new house sewer in Elm Hill avenue, between Howland street and Brunswick street; also a surface drain in Elm Hill avenue, between Brunswick and Crawford streets.

Stony Brook valley sewer. In private land near Amory street, where this sewer crossed the old Stony Brook channel in two 24-inch iron pipes, these latter were removed and the sewer restored to its full size. These iron pipes appeared to have caused the throttling of the flow, as the sewer for several hundred feet in this vicinity is nearly half filled with fine sand and gravel. This should be removed at the earliest practicable date, since it reduces the capacity of an already overcrowded sewer by one-half.

Separate systems of drainage have been completed in Bower, Clifford, Edgewood, Fenno, Gannett, Harrishof, Holborn, Howland, Kensington, Mayfair, Maywood, Mills, and Savin streets, Westminster avenue, Woodbine and Wyoming streets.

RECOMMENDATIONS.

Stony Brook channel, between Back Bay Fens and Hampshire street. While this work is not properly within my jurisdiction, I deem it wise to again call attention to the fact that this work must be started in the very near future, to afford a satisfactory outlet for the large surface drain which we are now building in Ruggles street, as mentioned previously in this report.

Fenner street, between Washington and Cobden streets. This is a surface drain intended to relieve the sewers of the Ruthven street district, and obviate the floodings so common on Cobden street.

Warwick street, between Hammond and Ruggles streets. This street has been badly in need of better sewerage facilities for many years. The old 12-inch pipe sewer is broken in several places, is full of sludge, rendering it impossible to connect new drains, to say nothing of carrying off the sewage and storm-water properly. A new house-sewer and a separate surface drain are strongly recommended for this street, since the new conduit in Ruggles street has already provided satisfactory outlet for both sewage and surface drainage.

Westminster street, between Hammond and Ruggles streets. Conditions in this street are similar to those that exist in Warwick street, and the same recommendations apply.

Winslow street, between Dudley and Palmer streets. This sewer is badly settled, and it is impossible to keep it clear. Frequent floodings have resulted, and a new sewer should be constructed in this street at the earliest opportunity.

Dorchester Brook sewer. This sewer starts at the main intercepting sewer in Massachusetts avenue, near the railroad crossing, and has been built of sufficient size in recent years through private land to the junction of George and Rockford streets. Drainage conditions on the lower portion of the line are, therefore, satisfactory, but the work of reconstruction has not been pushed forward fast enough to meet the needs of the growing territory farther up the line. Consequently, the portions in Rockford and Dudley streets and private land near Brook avenue, across Cottage, Julian, Brookford and Dacia streets, up as far as Quincy street and Blue Hill avenue, have become entirely too small to discharge the storm flow. The result has been the flooding of very many estates, causing great damage to abutters along this whole line, to say nothing of the damages resulting to property along connecting streets, which have the main sewer for an outlet.

Most of this line was built in 1874 along the old brook course, which formed the dividing line between Roxbury and Dorchester. In many places the old channel was simply arched over, a brick invert put in place, and the stone side walls allowed to remain. This answered well enough for the then sparsely-settled territory, but conditions have so changed as to render this sewer well nigh useless in times of heavy storms.

The worst conditions at the present time exist at the junction of Blue Hill avenue and Intervale street, and at the junction of Dudley and Shirley streets.

The latter location can be relieved by the rebuilding of

the sewer in a new location down Shirley and George streets, to meet the end of the completed large size. Work on this portion should be commenced during the coming year, as every delay only aggravates the conditions all along the line.

The vicinity of Blue Hill avenue and Intervale street cannot be relieved materially until a larger sewer is built up to that point, and cannot be relieved at all until the portion just mentioned is built in Shirley and George streets.

Eustis street, between Harrison avenue and Winslow street. This sewer is needed as an outlet for the proposed new sewer in Winslow street.

Orchard park and Chadwick street, between Yeoman and Orchard streets. This sewer has been found to be badly settled, and has been the cause of considerable annoyance to the builders of the Dearborn School by the constant flooding of the cellars. The School House Commission have petitioned for a new sewer here, and the work should be started during the coming year.

Fellows street, between Northampton and Hunneman streets, and outlet in Northampton street. A portion of the sewer in Fellows street, which was rebuilt in 1895, on a longitudinal platform, has settled so badly that it is desirable to immediately rebuild the same on a pile foundation.

Sterling street, between Westminster and Washington streets. Many complaints have been received from residents on this street regarding the condition of this sewer, and the sewer should be rebuilt. It will not be possible to rebuild the sewer, however, until an outlet is provided for the same in Westminster street, which is an additional argument for the building of the latter.

Sussex street, between Hammond and Warwick streets. The houses on this street are practically without any sewerage facilities whatever, and now that the new sewer in Hammond street has afforded satisfactory outlet, a new sewer should be constructed in Sussex street during the coming year.

Williams street, between Westminster street and Shawmut avenue. This sewer is in the same condition as the ones above mentioned, and should be rebuilt throughout.

Cabot street, between Ruggles and Sterling streets. The common sewer in this portion of Cabot street is 12-inch pipe and takes the water not only from the buildings, but from fifteen catch-basins, and the same is delivered to the interceptor at the corner of Cabot and Ruggles streets without

any overflow. A surface drain should be built to take this storm water, since provision has already been made for receiving the same into the new conduit in Ruggles street.

Roxbury high level sewer. Recent studies show that this line will start from Centre street, at the corner of Boylston avenue, following through Boylston avenue and other streets to the corner of Atherton and Amory streets, where it enters the Roxbury district. As this will be a long and expensive line to build, a start should certainly be made early in the coming year.

Willow Park, off Shawmut avenue. Conditions here are as bad as can be found in any street in the city, and as soon as the Ruggles street conduit passes the corner of Westminster street work should be begun on a new sewer for Willow Park.

Work on the separation of the storm water from the house sewage should be carried on throughout the year, and a list of some fifty streets has been prepared in which it will be desirable to prosecute this work.

SOUTH BOSTON.

There have been built in this district during the past year :

2,290.28	linear feet	brick sewer.
2,322.05	“ “	pipe sewer.
239.00	“ “	brick surface drain.
335.92	“ “	pipe surface drain.

Total, 5,187.25 “ “ = 0.98 mile.

The principal works completed are :

Columbia road. This boulevard, which has been in process of construction since 1897, and extends from Franklin Park, Dorchester, to Marine Park, South Boston, can now be said to be practically completed in so far as the work of this division is concerned. The Vale street outlet and other outlets along the South shore of South Boston are in process of construction, or will need extensions in the future, which possibly are not chargeable to Columbia road. Most of the work of the past year has been along Old Colony avenue, where an excellent system of large sewers has been constructed, this portion being the outlet for a large area in the Preble street district, as well as taking the place of the Vinton street overflow, which can now be abandoned.

D street. The sewer in this street has been rebuilt, of a larger size and at a lower grade, from Dorchester avenue to West Seventh street, for the purpose of relieving this and

adjacent streets from the numerous floodings which occur here during excessive storms at high tide. The overflow at the foot of D street has been provided with tide-gates and opened up again for use. Two new connections have been provided with the intercepting sewer, and an overflow established from the common sewer in Dorchester avenue at D street. All these improvements have not abated the flooding of cellars on D street and connecting streets. Many of these cellars are below mean high water, and D street itself, under the old railroad bridge, has an established grade of 7.90, making the problem of drainage a complicated one and the use of surface drains of no avail. Relief must be looked for in the intercepting system itself and the pumping facilities at Cow Pasture pumping station. Studies are already started for the relief of this long suffering district, and indicate that many important changes are necessary, the details of which will be submitted later in a separate report.

Dorchester street. This street has been laid out between Dorchester avenue and West Eighth street, under a special act of the Legislature, and an entirely new system of sewerage works has been constructed.

Kemp street. This sewer was built to carry the dry weather flow from the system of sewers in Columbia road to the South Boston interceptor in Washington avenue.

Vale street outlet. This sewer is now being built from Columbia road to tide-water to provide an adequate overflow or outlet for the system of sewers converging at the corner of Vale street and Columbia road.

A street, between West First and Congress streets. Work has been started here on a new system of sewers and surface drains to care for this now very important warehouse district. The old sewer is found to be badly broken down and much too small to take the flow in time of storm. Pile driving is necessary here to support the structure. Catch-basins are being built as the work progresses, and all old roof water leaders and catch-basins are being connected with the surface drain.

RECOMMENDATIONS.

Congress street, between A street and the drawbridge. This is an extension of the system already started in A street, and conditions here being similar to those in A street an entirely new separate system of sewerage is imperatively needed. The large number of warehouses here, with extensive roof areas, discharging storm water into the present small sewers, not only greatly overtax the same, but will continue

to overtax the small proposed house sewer for this street; therefore, the large surface drain which will be carried along in connection with the house sewer should receive the storm water by a separate connection from these large roof areas. This is very important, since we find it impossible to build a combined sewer in A street, which is the outlet for Congress and other streets, large enough to carry the combined flow from this area.

Sleeper street, between Congress street and Northern avenue. This street is to be built in the very near future in connection with Northern avenue, and should have a surface drain for its entire length, with new catch-basins.

Mount Washington avenue. This is a storm water outlet, which will take all the surface water from the A street system, discharging the same into Fort Point channel at the Mount Washington avenue drawbridge. On account of flat gradient here this conduit will necessarily be quite large, and it will probably be advisable to carry a house sewer along with it in the same trench.

West Ninth street. The portion between Mercer street and Dorchester street serves as an outlet for nearly the whole of Dorchester street, as well as an overflow for the portion of Ninth street between Dorchester street and D street. Much of it is in very poor condition, being half filled with sludge, badly out of line and grade, and too high to properly care for Dorchester street itself.

Swan street area. This is the area on the westerly side of Dorchester avenue, south of Dover street, formerly a well built up section, but now occupied by the tracks of the New York, New Haven & Hartford Railroad Company. A system of sewers draining this area and the West Fifth street area having been left intact, but now out of use, should be disconnected from the common system, as they serve no purpose except to admit tide-water into the system.

D street flooding. As indicated above, this is the most important problem in the district and will be the subject of a special report.

CITY PROPER.

There have been built in this district during the past year:

415.82	linear feet	wood sewer.
3,780	" "	concrete or brick sewer.
8,314.95	" "	pipe sewer.
4,089.77	" "	pipe surface drain.
111	" "	6-inch and 8-inch house drain.

Total, 16,741.54 " " = 3.17 miles.

The principal sewerage works completed in the district are as follows :

The sewer in Hull street, mentioned in previous reports, is now built.

Court square, west side, was built by tunnel process at a depth of about 20 feet and is now completed.

Back street. This sewer takes the sewage from the houses on the water side of Beacon street, which formerly discharged into the Charles River.

Washington street subway. On account of the depth of the subway, sewers in the district westerly from Washington street, between Common street and Bromfield street, will be cut off from their present outlets. The Transit Commission have built a sewer under the subway at Bennett street, through Bennett street and Harrison avenue to Harvard street and down Harvard street to Tyler street, where it connects with the Harvard street sewer ; also an overflow in Harrison avenue, from Harvard street to Kneeland street. This provides for sewers on the west side of Washington street, between Hollis and Boylston streets.

In Summer street the Transit Commission have built a deep sewer from Washington street to Atlantic avenue. This sewer will later be carried under the subway in Washington street to Winter street and will take the sewage from the district on the west side of Washington street, between Boylston and Bromfield streets.

Sewers have been built in Washington street, between Hollis and Boylston streets, by the Transit Commission, although the old sewers are not yet thrown out of commission.

RECOMMENDATIONS.

The Canal street relief sewer in Commercial street at State street, the Beverly street outlet, the Carleton and Buckingham street sewers were mentioned in last year's report, but nothing has been done this year.

Congress street at Franklin street. In excavating for a new pipe, the Water Department discovered that this sewer was badly broken and is in danger of falling in at any time. About ten (10) acres of territory are drained by this sewer ; and as this is a business district, the damage caused by a flood might be very heavy ; therefore, no time should be lost in rebuilding the sewer.

North Grove street. This sewer has caved in several times recently, so that a dangerous hole has been made in the surface of the street. The sewer is of wooden construction and appears to be badly rotted. It should be rebuilt.

Charter street, between Phipps and Marshall places. This sewer should be rebuilt.

NORTH ROXBURY.

There have been built in this district during the past year:

118.39	linear feet	pipe sewer.
611.53	“	“ brick surface drain.
14,784.01	“	“ pipe surface drain.
102	“	“ 6-inch and 8-inch house drain.

Total, 15,615.93 “ “ = 2.96 miles.

The principal sewerage works completed in this district are: Surface drains in Hemenway street, Westland avenue, Huntington avenue, Norway, Calumet and Day streets and many others.

RECOMMENDATIONS.

Jersey street, Queensberry street, Huntington avenue, Vila street district, Fenway Lands, Muddy River conduit, and Francis street across Muddy River. The sewerage works necessary in all these streets have been mentioned in previous reports, but nothing has been done this year.

Westland entrance. Surface drains should be built to furnish an outlet to the Stony Brook channel for a surface drain built in Hemenway street and connecting streets, as at present there is no outlet. About 50 per cent. of the surface drains which provide for the surface water of that part of the Metropolitan high level district which is situated between Bryant street and Massachusetts avenue and north of Huntington avenue, have been built. The balance should be constructed the coming year. The district on the east side of Parker Hill, and bounded roughly by Parker street, Hillside street, Huntington avenue and Longwood avenue, has about 80 per cent. of the surface drains already built. The balance should be constructed as soon as possible, thereby completing the surface drain system of the district.

There are other smaller districts in which surface drains have been built, such as the west side of Parker Hill, which drains into the Muddy River at Huntington avenue, and Francis street district, which drains into the Muddy River at Brookline avenue, and in these districts the necessary surface drains should be built to complete the system.

MAIN DRAINAGE WORKS.

Included under this head are: The main and intercepting sewers, Calf Pasture pumping station, outfall sewer, reser-

voir and discharge sewers at Moon Island, Lyons street pumping station and the care of Stony Brook channels.

MAIN AND INTERCEPTING SEWERS.

The following data shows the amount of work done in the building, repairing and cleaning of all tide-gates, sumps, overflows and regulators of the city sewerage system; connecting with the Metropolitan system, the main drainage works and Stony Brook, also the city intercepting sewers.

The number of regulators, gates, sumps and overflows to be cared for are as follows, including twenty-one miles of intercepting sewers:

	Gates.	Regulators.	Sumps.	Overflows.
Brighton	50	16	17	27
Charlestown.....	26	9	12	14
East Boston.....	38	15	16	22
City Proper.....	119	14	37	67
Dorchester	43	2	10	17
South Boston.....	45	4	18	23
Roxbury.....	30	1	8	12
Total.....	351	61	118	182

The following work was done in the past year:

Sewers cleaned	18,480 feet.
Number of new tide-gates built	13
“ “ “ sumps	4
“ “ “ overflows	13
“ “ regulators repaired	61
“ “ tide-gates repaired	323
“ “ flushing gates repaired	9
“ “ penstock gates repaired	4
“ “ manholes repaired	263
“ “ sumps repaired	69
“ “ old tide-gates replaced by new	78
“ “ manhole steps put in	526
“ “ loads of sewage matter removed from tide-gates, sumps, and regulators	4,357
Total length of Stony Brook water-course cared for and inspected after each storm is	6 $\frac{1}{4}$ miles.
The number of loads of material removed from channels during year	3,689

PUMPING STATION.

Two new 48-inch force mains have been laid, connecting thereon No. 5 engine with the pipe chamber. Ten gates, connecting the galleries with the pump wells, have been put in place. These gates are operated by electricity furnished by the plant at the station. Two 50-kilowatt engines and dynamos, to furnish light and power for the station, have been installed and are in operation. The whole station has been wired in connection with the electrical plant.

The second battery of three new 78-inch return tubular boilers, with a working pressure of 185 pounds to the square inch, has been installed and is in operation. The steam piping for the station has been relaid to take care of the increased steam pressure from 100 to 185 pounds. Two new feed pumps have been installed to work against a boiler pressure of 185 pounds. Two salt water pumps have been installed for force injections, and feed lines have been laid in boiler-house. Two new plungers and crossheads have been placed on pump No. 1, putting this pump in first-class condition.

Ten arc-lights have been erected on the roadway to the station, and the same are now in operation.

A new salt water tank for force injection has been installed. A new granolithic floor was laid in the boiler-house. A pipe-cutting machine has been set up in the machine shop. Pumping engine No. 5, which is being set up, is practically completed. A trial test of its working will be made within a week or two.

RECOMMENDATIONS.

A 12-inch water main should be laid to the station immediately. The present 6-inch main does not furnish feed water enough for the boilers, leaving, in case of fire, no supply to draw from. The road leading to the station should be macadamized and new fences built on the sides. The interior of the station needs painting. A new fence should be built around the grounds, as the old one is so decayed that it has blown down in several places and is beyond repair. The dock and scow berth should be dredged, as both are dangerous in their present condition for vessels to lie in. Motors for running the tools in the machine shop are necessary.

LYONS STREET STATION.

The station at Lyons street has been operated in a very satisfactory manner during the year, nothing but minor repairs being necessary.

MOON ISLAND.

Repairs have been made on the long gate-house during the past year. Doors, windows, window casings and sills have been repaired and replaced, also hardware in general, putting the building in very good condition. Most of the gates in the long gate-house are now in very good shape. A large number of iron rods, connecting the cross-heads to the gates, have been renewed, as the old rods had reached the dangerous point. The iron lifting rods and cross-heads are being replaced by new ones of composition. All of the anchor bolts were in bad condition, and are being replaced by new ones, of composition, both longer and heavier. The frames are being reset in clear Portland cement. The roadways are in fairly good condition, many loads of gravel having been placed on the roadbed during the past year, and still more is needed. There is a great shrinkage of material on the roadways on account of the high winds. Quite extensive repairs have been made on the stable, putting it in very good condition. In connection with the stable a new wagon shed and loft has been built. A new building was erected near the gate-house, containing an office and a room for the gatemen.

The houses at Squantum are in fair condition, but the barn is in bad shape and not very safe. As it would involve a large expenditure, however, to make the necessary repairs, the barn had better be taken down.

RECOMMENDATIONS.

The steam boilers on the plant have been in use for twenty-two years and should not be considered safe any longer for purposes other than for heating. For such use they will last for some time, and should be retained for that purpose. These boilers, with the engine, were an auxiliary, furnishing the power for running the shafting in the gate-house when the turbine was not in commission. As a substitute for them, and to avoid getting new boilers, the present steam engine should be sold and two gasolene engines installed to furnish the necessary power to run the shafting. This is a matter that should receive immediate attention, as it is not safe to put pressure on the boilers sufficient to run the shafting in case anything should happen to the turbine. The turbine is in need of repairs, a new shaft is needed and also repairs in the well. The lifting rods and bolts on the turbine gate have been renewed. The outfall gate-house is in bad shape. This building should be taken down and rebuilt. The mortar has apparently lost its virtue, and as the interior

of the building is often subjected to considerable pressure from compressed air, caused by the waves coming into the discharge sewer, it would not be surprising if sometime during a storm the building should be wrecked.

The old masoury in the divisions of the reservoir needs pointing generally. Some pointing is needed in certain portions of the out-fall sewer, but nothing is dangerously bad. The action of the tide, high winds, etc., has made considerable change in the rip-rap. Portions of it should be relaid to thoroughly protect the embankment. Some pointing should be done on the sea wall.

STONY BROOK.

The following is an account of work done in connection with Stony Brook improvement for the year ending January 31, 1905:

1,809	linear feet	12-foot by 12-foot brick conduit, including 8-foot reducer.
1,809	" "	7-foot circular brick conduit.
1,153	" "	12-foot by 12-foot reinforced concrete conduit.
1,117	" "	7-foot circular reinforced concrete conduit.
129	" "	11-foot 4-inch by 12-foot 10-inch reinforced concrete conduit, including 8-foot reducer.
379	" "	26-foot 4-inch by 13-foot 6-inch reinforced concrete conduit.
Sub-structure for gate-house No. 1 forebay, tailbay and connections.		
20 manholes.		
8 catch-basins.		
358 linear feet 10-inch C. B. drain.		
3,522	" "	10-inch underdrain.

During the past year the work on the foul flow channels, which was started in September, 1903, has been continued. The conduits have been completed. They comprise the continuation of the Commissioners' channel from Huntington avenue to the gate-house at Bryant street, and the building of the combined channels from Bryant street to the Charles river. There remains to be done the gate-houses with sub-structures and connection of same with conduits. A description of the conduits is as follows:

Between Huntington avenue and the gate-house, the conduit is 26 feet 4 inches by 13 feet 6 inches, of the basket-handle type, and is built of concrete reinforced with I-beams and twisted steel rods.

The structure from Bryant street to the Charles River consists of two conduits— one 12 feet by 12 feet, horseshoe shape, to care for the foul flow from the Commissioners' channel, and the other 7-foot circular conduit to care for the foul

flow of the old Stony Brook channel. These conduits were built of brickwork, with the exception of 129 feet between Ipswich and Newbury streets, 1,008 feet between Bryant street and Westland entrance, and 16 feet at the outlet at Charles River, where the construction was of reinforced concrete.

Between Ipswich and Newbury streets it was necessary to depress the arch of the larger conduit, giving it the dimensions of 11 feet 4 inches by 12 feet 10 inches instead of 12 feet by 12 feet, owing to the grade of the tracks of the Boston & Albany Railroad. Piles were driven on which I-beams were placed to support the tracks during construction.

The foundation along the line of the conduits was found with but few exceptions to be good; in some parts, however, piles were driven, amounting in all to 838 linear feet of trench.

With the completion of the gate-houses and connections, the flow from the Commissioners' channel and the old Stony Brook channel will be so controlled that when the waters are most foul the discharge will be diverted through covered channels to the Charles River, thereby preventing the deposit of sludge in the pond and the disagreeable and unsanitary results brought about by the conditions which have heretofore existed.

THE FENS DREDGING.

Since the construction of the Commissioners' channel of Stony Brook the Fens ponds have been receiving more or less sewage during rain storms. This sewage enters the Commissioners' channel through the overflows of sewers which are in the Stony Brook drainage area. These sewers are built upon the combined principle, namely, they carry both house and storm drainage. Consequently when they become charged with storm water, relief is afforded through their overflows. This sewage is carried along in the Stony Brook channel to the Fens ponds, and mingling there with the salt water becomes precipitated, thus forming, together with the street wash which settles in the slower currents of the ponds, the deposits which have become so objectionable. These deposits have formed semi-submerged banks of sludge, which have been offensive to the inhabitants of that section. Sulphuretted hydrogen, marsh and other obnoxious gases, products of putrefaction, bubble up from these sludge banks in warm weather.

In 1898 relief was sought by dredging a small portion of the ponds, and about 25,000 cubic yards of this sludge was

removed. This was only a temporary expedient, as the cause of the pollution was not removed.

The completion of the foul flow channels which are now under construction will remove the source of pollution from the Fens pond, and once the existing deposits are removed these conditions will not occur again.

Under Acts of 1903, chapter 465, the first part of section 10 reads:

"The City of Boston, by such officer or officers as the mayor may designate, shall forthwith, after the passage of this act, do such dredging in the Back Bay Fens as the Board of Health of said city may require."

The Mayor designated the Superintendent of Streets to do the work; so in the beginning of 1904 this department was confronted with the problem of removing from the Fens ponds upwards of 100,000 cubic yards of sludge which had been deposited in banks 8 feet deep adjacent to the outlet of Stony Brook and tapering to 6 inches deep at the Muddy river and Charlesgate outlets. To determine the method of removing and disposing of the sludge, numerous consultations were held with the Board of Health and Park Department, the latter department being asked to participate in the conferences, as the ponds to be cleaned were under their jurisdiction. One of the methods suggested by the Park Department was to drain the ponds and convey the sludge on the marsh land surrounding the pond.

The Sewer Division, to which the work had been delegated by the Superintendent of Streets, had no objection to this method of disposing of the material, but pointed out that a nuisance was very likely to be created by the exposure of this sewage sludge to the sun and air during the warm weather. This department, therefore, asked that if this method was adopted the Park Department assume the responsibility for such nuisance and the expense of abating it, if that became necessary, and that the Board of Health, to whose satisfaction the work must be done, would assure the department that it would not summarily order the removal of this deposit of sludge in case a nuisance developed, the department naturally not wishing to adopt this suggestion and run the risk of having to undo this work in case the results were objectionable.

The Park Department refused to assume such responsibility, and the Board of Health distinctly reserved to itself the right to order the abatement of such nuisance instantly, in case it developed. The Sewer Division was, therefore, naturally unwilling to try such an experiment wholly at its

own risk, preferring to find some method which certainly could be depended upon not to create a nuisance. If the method suggested had been adopted, a nuisance would have been created in the neighborhood, as certainly a mass which was objectionable when covered most of the time with water would be much more of a menace to health if deposited on the shore in the sun.

After carefully considering numerous ways of accomplishing the work, the department adopted the only possible method to cleanse the ponds and at the same time not create a nuisance. They used a hydraulic dredge to pump the sludge and force it through a pipe line to a coffer-dam in the Charles River, from which the sludge could be dredged and towed to sea. By this method this offensive material was handled entirely under water until it reached the coffer-dam, which was located as far away from the Beacon street houses as was practicable.

The dredge built in the Fens ponds is 80 feet long, 25 feet beam, and $3\frac{1}{2}$ feet draught. On this the machinery is placed, which consists of two 100-h.p. boilers of the Penn type, which supply the steam for two 12-inch by 18-inch Automatic Atlas engines, connected with one shaft and pulley, which drive, with a 24-inch belt, a compound 12-inch suction and 12-inch discharge centrifugal dredging pump.

The suction end of the pump is connected with a flexible suction, having a jet head to break up the material. The suction is on a 40-foot boom, which can be moved from side to side, as well as raised or lowered. The discharge end of the pump is continued to the rear end of the dredge, where it connects with the pipe line. The first 200 feet of this line next to the dredge is made up of alternate pieces of pipe and rubber sleeves supported on pontoons, this giving great flexibility in operating, for the dredge can be manipulated over the ponds, into coves, etc., for quite a period, without disconnecting the pipe line to add to its length.

From the dredge the sludge is forced through a 12-inch spiral-riveted pipe line of about 5,000 feet in length to a coffer-dam or crib on the edge of the channel in the Charles river, 700 feet from shore. The crib is 100 feet long, 40 feet wide, and 16 feet deep, and is built of 6-inch sheeting, with grooves and splines, reinforced with piles and walings.

The discharge from the pipe line at the crib consists of solids and water. The crib acts as a settling tank, the solids remaining, and the clear water flowing over the top.

The sludge is removed from the crib and deposited in

scows by a clam-shell digger. The scows are towed down the Charles River, through 10 drawbridges, and then to sea, where they are dumped at the Minot's ledge and Egg Rock range, a distance of 14.25 miles.

The portion of the ponds already dredged show a depth of water of 10 feet, where formerly it was from 1 to 3 feet; the bottom is clean mud (*i.e.*, free from sewage deposit), and the surface is much clearer, with no gas bubbles rising to the surface.

Dredging was carried on until ice in the Charles river prevented towing to sea, January 14, 1905, when the plant shut down. The dredging will be resumed when the river is free from ice.

ENTRANCE FEES, PERMITS AND ASSESSMENTS.

Entrance fees to the amount of \$3,828.16 have been collected from estates upon which no sewer assessment was ever paid, in accordance with chapter 38, section 10, of the Revised Ordinances of 1898.

Bills for sewer assessments amounting to \$665.75 have been deposited for collection, representing those estates assessed under chapter 456 of the Acts of 1889, and amendments thereto, which have been connected during the year with the sewers for which they were assessed.

One thousand five hundred and nineteen (1,519) permits have been issued to licensed drain-layers to make connections with the public sewers, and the work done under these permits has been inspected, and a record of the same made on the plans of this division, in accordance with the provisions of chapter 38, sections 6 and 10, of the Revised Ordinances of 1898.

Four hundred and ninety-three (493) permits have been issued to district foremen and contractors for construction and repairs of sewers and catch-basins.

Plans for the assessment of estates benefited by sewer construction have been furnished the Street Commissioners, representing 75,554 feet of sewers and appurtenances, costing \$394,876.

Respectfully,

GEORGE PHILLIPS,
Deputy Superintendent.

Financial Statement. — Street Department, Sewer Division.

APPROPRIATIONS.	Balances on Hand Feb. 1, 1904.	Appropriations, Loans and Transfers during the year.	Revenue Received during the year.	Total Credits.	Expenditures during the year.	Balances on Hand Jan. 31, 1905.
Sewer Division .....	.....	\$323,803 03	\$557 69	\$324,360 72	\$324,360 72	
Sewerage Works	\$14,895 63	1,000,000 00	.....	1,014,895 63	1,012,792 48	\$2,103 15
Separate System of Drainage	302,568 89	600,000 00	.....	902,568 89	642,965 95	259,602 94
Charles River Basin	540,063 29	.....	.....	540,063 29	540,063 29	
Construction of Highways already laid out .....	.....	90,063 13	.....	90,063 13	90,063 13	
Highways, Making of .....	.....	72,718 01	.....	72,718 01	72,718 01	
Dorchester street .....	.....	5,845 85	.....	5,845 85	5,845 85	
Totals	\$857,527 81	\$2,092,430 02	\$557 69	\$2,950,515 52	\$2,688,809 43	\$261,706 09

OBJECTS OF EXPENDITURES.

Pumping Station and Moon Island	\$121,199 25	
Tow-boat	\$13,005 43	
Less paid by Sanitary Division	6,544 77	
	<hr/>	6,460 66
Main and intercepting sewers	18,235 95	
	<hr/>	\$145,895 86

Pumping Station, Lyons Street, Dorchester.

Maintenance	9,782 39
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Stony Brook.

Maintenance	6,994 33
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Miscellaneous Maintenance Charges.

Office and engineering force, salaries and expenses,	7,185 03	
Current expenses of yards, lockers, stables, etc.	\$61,690 20	
Less amount earned by division teams and engines	28,841 60	
	<hr/>	32,848 60
Repairing and cleaning catch-basins, sewers and general repairs	54,329 44	
House connections, work for other departments, incidentals, etc.	56,149 60	
Hardware, tools, rubber goods, etc.	3,594 00	
Telephones not included elsewhere	1,663 68	
Increase of stock at yards	5,917 79	
	<hr/>	\$324,360 72

SEWERAGE WORKS.

Pumping Station and Moon Island	\$163,915 12
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Sewer Construction.

South Boston	\$48,150 60	
East Boston	39,225 10	
Charlestown	24,607 02	
Brighton	14,210 87	
West Roxbury	57,222 22	
Dorchester	111,873 78	
Roxbury	26,755 94	
City Proper	63,097 04	
	<hr/>	385,142 57

<i>Carried forward</i>	\$549,057 69
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Brought forward \$549,057 69

Miscellaneous Construction Charges.

Office and engineering force, salaries and expenses,	85,685 84
Hardware, tools, rubber goods and damages	23,661 40
New manholes	9,943 36
Sundries	22,060 93
Foul flow channel, Stony Brook improvement, construction and engineering	322,383 26

\$1,012,792 48

SEPARATE SYSTEMS OF DRAINAGE.

Sewer Construction.

South Boston	\$15,254 14
East Boston	20,303 88
Charlestown	5,336 39
Brighton	25,370 20
West Roxbury	142,071 16
Dorchester	184,991 53
Roxbury	192,881 07
	<u>\$586,208 37</u>
Miscellaneous charges, engineers' salaries, sundries and expenses	56,757 58
	<u>\$642,965 95</u>

CHARLES RIVER BASIN.

Miscellaneous charges, engineers' salaries, sundries and expenses	\$26,509 24
Construction in Back Bay Fens	513,554 05
	<u>\$540,063 29</u>

CONSTRUCTION OF HIGHWAYS ALREADY LAID OUT.

Miscellaneous charges, engineers' salaries, sundries and expenses	\$2,377 07
---	------------

Sewer Construction.

South Boston	\$37,539 14
East Boston	50,009 72
City Proper	137 20
	<u>87,686 06</u>
	<u>\$90,063 13</u>

HIGHWAYS, MAKING OF.

Miscellaneous charges, engineers' salaries, sundries
and expenses \$4,853 36

Sewer Construction.

West Roxbury \$67,153 62
Roxbury 67 20
City Proper 643 83

67,864 65

\$72,718 01

DORCHESTER STREET.

Sewer Construction \$5,845 85

RECAPITULATION.

Street Department, Sewer Division \$324,360 72
Sewerage Works 1,012,792 48
Separate Systems of Drainage 642,965 95
Charles River Basin 540,063 29
Construction of Highways Already Laid Out 90,063 13
Highways, Making of 72,718 01
Dorchester street 5,845 85

\$2,688,809 43

**Summary of Sewer Construction for the Twelve Months End-
ing January 31, 1905.**

DISTRICT.	Built by the City by Con- tract or Day Labor.	Built by Private Parties.	Total Length Built During the Twelve Months End- ing January 31, 1905.
	feet.	feet.	feet.
City Proper.....	18,362.82	4,744.72	23,107.54
East Boston.....	5,491.60	265.32	5,756.92
Charlestown.....	1,630.83	.....	1,630.83
South Boston.....	5,187.25	.....	5,187.25
Roxbury.....	36,067.16	.....	36,067.16
West Roxbury.....	51,135.18	1,088.73	52,223.91
Dorchester.....	32,669.63	459.95	33,129.58
Brighton.....	6,532.81	199.75	6,732.56
Totals.....	157,077.28	6,758.47	163,835.75

**Summary of Sewer Construction for Five Years Previous to
February 1, 1905.**

	1900.	1901.	1902.	1903.	1904.
	linear feet.	linear feet.	linear feet.	linear feet.	linear feet.
Built by the city by contract or day labor.....	78,255.92	122,092.52	120,871.32	216,667.57	157,077.28
Built by private parties...	15,438.28	14,004.67	9,922.02	9,906.96	6,758.47
Totals.....	93,694.20	136,097.19	130,793.34	226,574.53	163,835.75

**Schedule of Sewers Built to Date in the City of Boston,
February 1, 1905.**

DISTRICT.	Total Length Built During Twelve Months Ending January 31, 1905.	Length Rebuilt and Abandoned During Twelve Months Ending January 31, 1905.	Additional Length for the Twelve Months Ending January 31, 1905.	
	linear feet.	linear feet.	linear feet.	Miles.
City Proper	23,107.54	2,149.00	20,958.54	3.97
East Boston.....	5,756.92	445.00	5,311.92	1.01
Charlestown	1,630.83	319.90	1,310.93	0.25
South Boston.....	5,187.25	2,160.17	3,027.08	0.57
Roxbury	36,067.16	1,373.32	34,693.84	6.57
West Roxbury.....	52,223.91	.....	52,223.91	9.89
Dorchester.....	33,129.58	285.40	32,844.18	6.22
Brighton.....	6,732.56	.....	6,732.56	1.28
Totals.....	163,835.75	6,732.79	157,102.96	29.76
Length built previous to January 31, 1904.....				615.28
Total.....				645.04
Length of intercepting sewers.....				24.12
Total.....				669.16
Total mileage of streets containing sewerage works.....				446.46

Catch-basins built February 1, 1904, to January 31, 1905.

	Number.	
City Proper.....	25	1,180,824 linear feet of sewers flushed.
Roxbury.....	47	3,668 cubic yards material removed from sewers.
Dorchester.....	22	
West Roxbury.....	82	10,168 catch-basins cleaned; 31,747 cubic yards removed.
Brighton.....	21	
Charlestown	9	
East Boston.....	9	
South Boston.....	29	
Total.....	244	

Amount of Sludge Received and Removed from Deposit Sewers during Twelve Months ending January 31, 1905.

MONTH.	Received. Cubic Yards.	Removed. Cubic Yards.	
1904.			
February.....	462	585	
March.....	481	570	Sludge in sewers Feb- ruary 1, 1904, 1,689 cubic yards.
April.....	611	543	
May.....	649	740	
June.....	765	772	
July.....	1,028	1,051	Sludge in sewers Feb- ruary 1, 1905, 856 cubic yards.
August.....	1,062	1,142	
September.....	992	922	
October.....	1,022	1,112	
November.....	961	1,038	
December.....	1,038	1,249	
1905.			
January.....	968	1,148	
Totals.....	10,039	10,872	

**Amount of Refuse Removed from Filth Hoist for the Year
ending January 31, 1905.**

1904.	lbs.
February	49,100
March	43,100
April	39,000
May	43,500
June	64,900
July	46,600
August	57,600
September	69,300
October	57,500
November	40,000
December	42,900
January, 1905	49,000

602,500 lbs. = 301 $\frac{1}{2}$ tons.
1,650 lbs. per day.

Real Estate in Charge of the Sewer Division.

OWNED BY CITY.	ASSESSED VALUATION.	
	Land.	Buildings.
Sewer yard, 678 Albany street, South End.....	\$56,400	\$3,000
Gate-house, Columbus avenue, Roxbury.....		
Sewer yard, Rutherford avenue, Charlestown.....	13,000	4,000
Sewer yard, Massachusetts avenue, near Albany street, South End.....	56,400	3,000
Sewer yard, Western avenue, Brighton.....	8,600	5,500
Pumping station, Old Harbor Point, Dorchester....	98,000	300,000
Land, buildings and reservoirs at Moon Island and Squantum.....	19,500	4,300
Sewer yard, North Grove street, West End. (Occupied in common with other divisions of the Street Department).....	66,720	28,000
Sewer yard, Child and South streets, West Roxbury. (Occupied in common with Paving Division).....	19,300	3,000
LEASED.		
Sewer yard, Revere street, West End. (Occupied in common with Paving Division. Leased from J. J. Costello).....	76,500	3,500
Sewer yard, Eagle street, East Boston. (Occupied in common with other divisions. Leased from trustees of Glendon Company).....		
Sewer yard, Old Harbor street and Columbia road, South Boston. (Office building owned by Sewer Division. Leased from estate of Choate Burnham).....	4,800	3,200
Sewer yard, Gibson street, Dorchester. (Buildings erected by Sewer Division. Leased from trustees of Gibson School Fund).....	7,000	5,000

APPENDIX F.

REPORT OF THE DEPUTY SUPERINTENDENT OF THE
STREET CLEANING DIVISION.

941 TREMONT BUILDING,
BOSTON, MASS., February 1, 1905.

HON. JAMES DONOVAN,
Superintendent of Streets :

DEAR SIR,—I have the honor to submit the annual report of the Street Cleaning Division of this Department for the year ending January 31, 1905.

There has been no marked departure in the methods, means or force in carrying on the work or solving the problems of this division during the year just elapsed—a fact which may be advanced as an argument that there is no longer any feature of its operations that can be considered tentative to-day.

An average force per week of 450 men has been constantly at work during the entire year. Instead of diminishing, as some would suggest, this force must increase; particularly, if the streets are to be cleaned as often as the citizens are demanding, and if the field of its operations is to be extended, which seems to be more than a contingency. It is impossible to ignore or wave aside the demands that are being made on this division for more and better service. The merchants, whose streets were cleaned in the primitive days of the division but two or three times a week, now want them cared for every day; and the denizens of the distant suburbs refuse to see any reason in our boundary lines.

NEW DISTRICT.

Early in May of last year a beginning was made towards establishing a force in Dorchester. Up to that time the South Boston force cleaned only as far as Mt. Vernon street. A small force, including a sub-foreman, has been detailed to care for that part of Dorchester bounded and described as follows :

Bounded on the south by Mt. Vernon street and Willow court; westerly by the "Midland Division" New York, New Haven, & Hartford Railroad to Geneva avenue; thence southerly by and including Geneva avenue to Dorchester avenue; thence by and including Gibson street to Adams street; thence by and including Neponset avenue to the bridge; easterly by the water front to the point of beginning — the easterly end of Mt. Vernon street.

It is pardonable to state that with a small force this territory has been kept in acceptable condition up to date, so much so that there is a clamor already that the service be extended to the border line of the city — Mattapan and Lower Mills. The demand is not unjust nor unreasonable. It is simply a question of money. The cost to date for the work was \$5,175.64.

Dorchester's neighbors in Roxbury, Jamaica Plain and Brighton have seen this development and improvement, and are persistently agitating for similar service.

Dudley street is the southern boundary of the Roxbury Street Cleaning district, if exception be made of Washington street, Warren street and Blue Hill avenue, which, being block-paved thoroughfares, are machine swept as far as Green street and Grove Hall, respectively. If the other half of that fair and thickly settled region of Roxbury does not receive the attention it deserves it is because no financial provision has been made for it. A recommendation will be made later on to solve this apparent problem.

STOCK.

Both the live and the rolling stock have been added to and improved during the year. Some splendid specimens of horse-flesh may be seen at the South and West stables, and they were bought at a fair market value. Many new carts have taken the place of old ones, and all the carts are in good repair.

There was no addition to the sweeping machines, all of which are in working condition.

DUMPS.

It was stated with much confidence in the report of last year that some provisions were being made to have an additional scow located at the end of Charles River avenue, which would accommodate the West End, North End and Charlestown forces, but up to date nothing appears to have been done in this direction. Such a solution of the problem

has no doubt been demonstrated to be expensive, but it is respectfully submitted that the present condition of things is becoming very costly and almost extravagant. The scow at Fort Hill Wharf, foot of Oliver street, is to-day receiving the collection from the entire business district of the city, from the South and West Ends, from the Back Bay and sometimes from distant South Boston. It is being taxed often beyond its capacity, apparently. The cost of the towing to the sea has increased from year to year, and the expense of disposing of a load of dirt at its final destination sometimes amounts to \$2.50.

PAPER LITTER.

This is another of the vexing problems of this division, and the nuisance is growing instead of diminishing. If there is a remedy it has never been applied. There is law enough not only to minimize but to prevent the evil.

PUBLIC ALLEYS.

It is submitted, in close connection with the above, that much of the litter that fouls our streets comes from both public and private alleys.

The Tenement House Commission, in a very exhaustive report, sent by His Honor Mayor P. A. Collins to the Common Council, May 9, 1904, states that the condition of privately owned alleys and passageways in Boston has long been a source of complaint. The City Engineer has recently completed an investigation which reveals the following facts :

Public alleys in Boston	49
Private streets and alleys	1,401
Length of all alleys in miles	32.8
Area in square yards	244,252

Sanitary condition of private alleys :

Clean	474
Fairly clean	452
Dirty	401
Filthy	74

Concluding, it says: "The immediate problem before the city is to get these alleys clean. The tenants think nothing of casting all manner of refuse into them. Even when the abutters try to keep them clean, the public often uses them for a dump."

Is it any wonder, then, that it was submitted in last year's annual report that these alleys were the filth tributaries of the city's streets? Is it not preposterous to claim that it cannot be prevented? It has been and is and ever will be a nuisance and a menace until better conditions be insisted upon by those who should see that the laws are observed.

TUNNELS AND SUBWAYS.

It is not idle to predict that the streets occupied and used by the contractors in the building of the East Boston tunnel and the Washington-street subway will not be in acceptable condition until the work has been completed.

Like street cleaning itself, this is dirty work; and the citizen whose business is carried on along its line of march must hope for nothing more than a minimizing of the nuisance.

PUSH-CART WORK.

This is certainly the popular branch of the street cleaning service, and there is nothing to be said about it except that it should be extended. There is a demand for it from every public square in the city, in front of every church and theatre, and in all the immediate suburbs.

RECOMMENDATIONS.

- Extend the lines of the Dorchester District.
- A larger force for Roxbury, to cover the entire district.
- Establish a small force in Jamaica Plain and Brighton.
- A new stable for South Boston and Dorchester.
- Extend push-cart system.
- Scow at the end of Charles River avenue.
- Uniform size receptacle for store and house dirt.

Respectfully submitted,

JOSEPH J. NORTON,
Deputy Superintendent.

FINANCIAL STATEMENT.

Appropriation, 1904-1905	\$410,000 00
Transferred from surplus revenue	24,172 62
Total expenditures	<u>\$434,172 62</u>

OBJECTS OF EXPENDITURES.

Superintendence.

Salary of superintendent	\$3,000 00
Office pay-rolls	4,978 19
Stationery	384 14
Printing	731 97
Board of horses, not mentioned elsewhere . .	712 37
Telephone service	720 76
	<hr/>
	\$10,527 43
	<hr/>

Machine Sweeping of Paved Streets.

This includes cost of sweeping, loading and removal of street dirt.

District 1, South Boston	\$15,291 67
District 2, East Boston	6,781 58
District 3, Charlestown	10,387 11
District 6, Dorchester	2,440 92
District 7, Roxbury	13,526 19
District 8, South End :	
Up-town gang	10,273 24
Down-town gang	33,396 08
District 9, Back Bay	5,293 64
District 10, West End	14,014 12
District 10, North End	14,171 29
	<hr/>
	\$125,575 84
	<hr/>

Total length of miles cleaned, 12,259.

Cleaning Gutters.

This includes cost of sweeping, loading and removal of street dirt.

District 1, South Boston	\$2,142 07
District 2, East Boston	2,535 18
District 3, Charlestown	2,313 95
District 6, Dorchester	2,700 14
District 7, Roxbury	1,919 82
District 8, South End :	
Up-town gang	2,691 09
Down-town gang	
District 9, Back Bay	4,254 76
District 10, West End	
District 10, North End	
	<hr/>
	\$18,557 01
	<hr/>

Total length of gutters cleaned, 2,877.

STREET DEPARTMENT — STREET CLEANING DIVISION. 123

Cost of Maintaining Dumps.

District 1, South Boston	\$375 90
District 2, East Boston	249 75
District 3, Charlestown	395 85
District 6, Dorchester	
District 7, Roxbury	391 55
District 8, South End:	
Up-town gang	345 45
Down-town gang	514 62
District 9, Back Bay	379 60
District 10, West End	314 37
District 10, North End	180 69
	<hr/>
	\$3,147 78

Removing Snow.

This includes labor on crossings, in streets, carting of snow, etc. It also includes the snow work of the Patrol System.

Labor and teaming	\$61,681 54
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Miscellaneous.

This shows the cost of such work as may not be characterized the same in all districts.

District 1, South Boston	\$1,957 89
District 2, East Boston	145 40
District 3, Charlestown	
District 6, Dorchester	
District 7, Roxbury	1,053 43
District 8, South End:	
Up-town gang	2,937 13
Down-town gang	1,126 62
District 9, Back Bay	743 56
District 10, West End	188 35
District 10, North End	230 95
	<hr/>
	\$8,383 33

Patrolling by Districts.

This includes the cost of picking up and the removal of refuse papers, etc., from the streets.

District 1, South Boston	\$1,555 12
District 2, East Boston	1,493 76
District 3, Charlestown	
	<hr/>
<i>Carried forward</i>	\$3,048 88

<i>Brought forward.</i>	\$3,048 88
District 6, Dorchester	34 58
District 7, Roxbury	34 12
District 8, South End :	
Up-town gang	42 00
Down-town gang	175 06
District 9, Back Bay	2 10
District 10, West End	246 42
District 10, North End	
	<hr/>
	<u>\$3,583 16</u>

Public Alleys.

Labor and teaming	<u>\$322 44</u>
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Collection of Ashes and House Dirt.

This was done to help the Sanitary Division in its spring cleaning work.

Labor and teaming	<u>\$1,454 48</u>
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Push-cart Patrol System.

Superintendence, inspection, etc.	\$7,797 78
Push-carts, labor, teaming, etc.	50,593 41
Paper patrolling	4,395 50
Stock	1,931 90
Holidays	5,763 77
Repairs at station, 95 Columbus avenue	131 15
Sundries, repairs, etc.	2,641 08
Miscellaneous work	3,964 36
	<hr/>
	<u>\$77,218 95</u>

Stable and Yard Expenses.

In the following statement is included the cost of the South End, West End, Roxbury, South Boston, Charlestown and East Boston stables :

Superintendence of South stable	\$1,396 20
Labor, including the cost of feeders, hostlers, broom-makers, watchmen, yardmen, messenger, hay, grain, etc.	56,741 03
Cart and carriage repairs	7,026 79
Horseshoeing	3,696 42
Harness repair	1,940 79
	<hr/>

<i>Carried forward</i>	<u>\$70,801 23</u>
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STREET DEPARTMENT — STREET CLEANING DIVISION. 125

<i>Brought forward</i>	\$70,801 23
Sweeping machine repairs	2,222 04
Stable and shed repairs	1,321 12
Street car tickets	600 00
Tool repairs	370 05
Veterinary services and medicine	1,956 29
Board and care of horses not mentioned elsewhere,	504 15
	<hr/>
	<u>\$77,774 88</u>

See Patrol System.

Stock Account.

Broom stock purchased	\$5,003 70
Harnesses and horse furnishings purchased	2,146 20
Horses purchased	4,178 06
Tools purchased	1,244 71
Bag carriers, bags, etc.	6 10
Carts, carriages, etc.	1,150 43
	<hr/>
	<u>\$13,729 20</u>

Miscellaneous.

Holidays	\$21,615 61
Scow (cost of disposal at sea of 32,910 loads of street dirt)	8,064 00
Sundries	2,262 46
Annuity	300 00
Charles River dump	266 00
	<hr/>
	<u>\$32,508 07</u>

GENERAL RECAPITULATION OF EXPENSES.

Superintendence	\$10,527 43
Machine sweeping of paved streets	125,575 84
Cleaning gutters	18,557 01
Maintaining dumps	3,147 78
Removal of snow and ice	61,681 54
Miscellaneous work	8,383 33
Paper patrolling	3,583 16
Ashes and house dirt	1,454 48
Cleaning public alleys	322 44
Patrol system, push-carts	77,218 95
Stable and yard expenses	77,774 88
Stock account	13,729 20
Miscellaneous	32,508 07
	<hr/>
	<u>\$434,464 11</u>

Of the above amount, the sum of \$291.49 was paid by the Sanitary Division for work done, thus making the total

net expenses of the division, as shown in the financial statement, \$434,172.62.

INCOME.

Amount of bills deposited with the City Collector during the financial year ending January 31, 1905, \$1,157.

Table Showing the Number of Loads of Street Dirt Removed.

DISTRICTS.	Number of loads of dirt removed.	Cost per load of cleaning streets and removing to dumps, including foreman's superintendence.
1.....	22,104	\$0 78
2.....	7,026	1 32
3.....	7,269	1 74
6.....	7,532	68
7.....	9,128	1 69
8 { Up-town gang.....	8,843	1 46
{ Down-town gang.....	16,457	2 02
9.....	4,578	2 08
10 { West End.....	6,674	2 09
{ North End.....	7,757	1 82
	97,368	
Removed by push-cart patrol system.....	5,499	Barrels and bag loads. 74,056
Removed by district push-carts.....		29,216
Removed by paper patrol.....	4,856	
	107,728	103,272

Total number of cart loads removed..... 107,723
 Total number of barrel and bag loads removed..... 103,272

Thirty-two thousand nine hundred and ten (32,910) loads of street sweepings (or 30 per cent.) were delivered at the dumping scow at Fort Hill wharf, the towing of which to sea cost twenty-five (25) cents per load.

STREET DEPARTMENT—STREET CLEANING DIVISION. 127

Public Waste Barrels.

Total number of waste barrels emptied	.	.	.	10,033
Total number of subway barrels emptied	.	.	.	3,584
Total	.	.	.	13,617

SUMMARY.

Miles of paved streets cleaned	.	.	.	.	12,259
Miles of gutters cleaned	.	.	.	.	2,877
Loads of dirt removed	.	.	.	.	102,867
Loads of paper and refuse removed	.	.	.	.	4,856
Push-cart barrels emptied	.	.	.	.	103,272
Waste barrels emptied	.	.	.	.	10,033
Subway barrels emptied	.	.	.	.	3,584

PROPERTY OCCUPIED BY THE STREET CLEANING DIVISION.

South Boston—Lease of stable, corner of H and Second streets.

East Boston—Part of stable on East Eagle street, leased.

Charlestown—Part of stable on Rutherford avenue. City stable. Office building, Rutherford avenue. City property.

Roxbury—Part of stable on Highland street. City stable.

South End—Part of stable, 650 Albany street. City stable.

West End—Part of stable on North Grove street. City stable.

Back Bay—Lease of building, 95 Columbus avenue.

APPENDIX G.

REPORT OF THE DEPUTY SUPERINTENDENT OF
THE STREET WATERING DIVISION.

801 TREMONT BUILDING,
BOSTON, MASS., February 1, 1905.

HON. JAMES DONOVAN,

Superintendent of Streets :

DEAR SIR, — I respectfully submit the annual report of the Street Watering Division of the Street Department for the financial year ending January 31, 1905.

The expense of watering all public streets during the year was \$165,071.08.

The weather conditions were, on the whole, about the same as 1904, and the expense showed only a slight increase.

The force of carts was increased by eight (8), due to boulevard improvements in South Boston and East Boston, and improvements in the service in Charlestown, West Roxbury and Roxbury.

Yours respectfully,

AMBROSE WOODS,

Deputy Superintendent.

STREET DEPARTMENT — STREET WATERING DIVISION. 129

FINANCIAL STATEMENT.

Amount of appropriation	\$165,000 00
Revenue received during 1904-1905	72 00
Total	<u>\$165,072 00</u>
Amount of expenditures	<u>165,071 08</u>
Balance	<u>\$0 92</u>

OBJECT OF EXPENDITURES.

Salaries and labor	\$18,731 36
Teaming	139,655 00
Water posts, repairs, etc.	2,371 61
Board of horses	979 67
Shoeing and clipping	140 07
Veterinary services and medicine	224 85
Harnesses and supplies	146 98
Horses, purchase of, and hire	265 00
Vehicles, purchase of, repairs, etc.	1,385 26
Printing	96 15
Stationery and postage	53 30
Bicycles, repairs, etc.	383 75
Telephone service	258 58
General supplies	379 50
Total	<u>\$165,071 08</u>

Objects of Expenditures, Classified by Districts, from February 1, 1904, to January 31, 1905.

DISTRICTS.	Teaming.	Labor.	Maintenance.	Totals.
South Boston.....	\$12,595 50	\$1,153 58	\$1,010 35	\$14,759 43
East Boston.....	8,652 50	1,153 58	734 80	10,540 88
Charlestown.....	6,325 00	576 80	551 10	7,452 90
Brighton.....	11,377 50	1,153 58	964 42	13,495 50
West Roxbury.....	17,887 50	1,730 38	1,515 52	21,133 40
Dorchester.....	20,036 50	2,307 17	1,745 15	24,088 82
Roxbury	23,541 50	1,730 38	1,882 92	27,154 80
Back Bay.....	13,556 50	1,153 58	964 42	15,674 50
South End.....	11,725 00	1,153 58	918 50	13,797 08
City Proper.....	13,957 50	1,730 37	1,285 90	16,973 77
Totals.....	\$139,655 00	\$13,843 00	\$11,573 08	\$165,071 08

Expenditures since 1899.

The expenditures since 1899, when the city assumed for the first time the watering of paved streets, are as follows:

1899	\$174,625 97
1900	174,742 45
1901	164,259 36
1902	160,147 25
1903	164,104 74
1904	165,071 08

Amount of Water used in 1904.

Capacity of two-horse cart (gallons)	600
Average loads thrown per day, per cart	26
Total gallons thrown per day, per cart	15,600
Number of cart days work	27,931
Total gallons of water used	435,723,600

Distribution of Carts, showing Entire Amount of Work Done.

DISTRICTS.	Hired Carts.	Number Miles Covered.	Average per Cart.
South Boston	22	40	1.82
East Boston.....	16	25	1.56
Charlestown.....	12	22	1.83
Brighton	21	41	1.95
West Roxbury.....	33	76	2.30
Dorchester.....	38	92	2.40
Roxbury	41	86	2.10
Back Bay.....	21	83	1.20
South End.....	20		
City Proper.....	28		
Totals	252	465	1.90

Location of Water Posts by Districts.

DISTRICTS.	YEAR.									Electric Hydrants.
	1891	1897	1898	1899	1900	1901	1902	1903	1904	
South Boston...	23	28	35	38	39	39	39	39	40	
East Boston	16	34	41	42	42	42	43	43	45	
Charlestown....	19	20	20	21	22	22	22	22	22	
Brighton	25	44	47	50	48	50	50	50	50	
West Roxbury..	50	67	75	86	81	84	85	85	*85	
Dorchester	61	83	88	99	100	101	101	102	105	
Roxbury	53	68	76	80	73	75	75	75	75	
City Proper.....	24	53	69	74	68	73	73	72	72	5
Totals.....	271	397	451	490	473	486	488	488	494	5

NOTE. — During the year 5 posts were relocated, 2 posts abandoned, and 7 new posts erected.

* One post not counted in 1903.

APPENDIX H.

REPORT OF THE COMMISSIONERS FOR THE BOSTON
AND CAMBRIDGE BRIDGES.926 TREMONT BUILDING,
BOSTON, February 1, 1905.

HON. JAMES DONOVAN,

Superintendent of Streets:

SIR, — I herewith submit the following report of the work done on the Boston and Cambridge bridges for the year ending January 31, 1905:

CAMBRIDGE-STREET BRIDGE.

This is a wooden pile bridge with a wooden leaf draw. It was rebuilt in 1884; the draw was again rebuilt in 1891. The lower planking on the draw has been renewed. The planking on the Boston side is old and needs renewal, and some of the piles need strengthening and the draw needs adjusting.

CANAL OR CRAIGIE'S BRIDGE.

This is a wooden pile bridge with a wooden turn-table draw; it was originally built in 1808 and was rebuilt in 1852, and was again rebuilt and widened in 1874. It is only in fair condition. The construction of the dam by the Charles River Basin Commission will cause the abandonment of this bridge early in the summer, and a temporary bridge is to be built to accommodate the travel.

NORTH HARVARD-STREET BRIDGE.

This bridge was originally built in 1662, and was rebuilt, except the piling, in 1879; the draw was built in 1891.

This bridge is in poor condition, and should be rebuilt and replaced by a wider structure; the piles are in poor condition, a few of the stringers and some of the fencing need renewal, the piers need replanking and the draw needs adjusting.

The Cambridge Bridges Commission have been directed by the Legislature to rebuild the bridge not less than 60 feet wide; its present width is 28 feet. The new bridge is to be known as Soldiers' Field bridge.

PRISON POINT BRIDGE.

During the work made necessary by the separation of grades at Prison Point street the present temporary bridge is maintained and repaired by the Boston & Maine Railroad, this commission only having charge of the operation of the draw; this bridge was opened to travel May 6, 1903.

WEST BOSTON TEMPORARY BRIDGE.

This bridge was built in 1898-99 to accommodate the travel using West Boston bridge until the Cambridge bridge should be built. October 5, 1904, a section of the Boston end of the bridge was destroyed by fire, necessitating the closing of the bridge to team and car travel while the bridge was being repaired; about 180 feet in length was practically rebuilt, except the piling, sidewalk and fences, and the bridge was reopened October 21. The channel-way of the river was changed from the Boston side to the middle of Cambridge bridge in June, and the westerly draw was put in commission, and the draw at the Boston end is no longer raised.

WESTERN-AVENUE BRIDGE.

The original structure was built in 1824. The present bridge was built in 1879-80, and the draw in 1891. Several of the piles on the Boston end of the bridge are in poor condition, and should be renewed or strengthened. The ends of the caps and some of the stringers have begun to decay; considerable deck planking has been renewed on the Boston side, and the remainder of the planking and some of the stringers should be renewed.

IN GENERAL.

The usual statement is appended showing the number of draw openings and the number of vessels which passed through.

The amount of revenue for rents, wharfage, etc., during the year has been \$810.60; one-half of this has been paid to each city.

Respectfully submitted.

J. P. LOMASNEY,

Commissioner for Boston.

The following is a statement of the payments made by the City of Boston on account of the Boston and Cambridge bridges, February 1, 1904, to January 31, 1905:

Appropriation for financial year 1904-05	\$20,000 00
Expended to January 31, 1905	16,263 90
Unexpended balance February 1, 1905	\$3,736 10

Classification of Expenditures.

OBJECT OF EXPENDITURES.	Cambridge Street.	Craigie's.	Essex Street.	Harvard.	North Harvard Street.	Prison Point.	West Boston.	Western Avenue.	General Account.	Totals.
Pay-rolls, draw tenders *	\$663 96	\$2,149 96	\$670 00	\$1,733 00	\$514 00	\$1,523 00	\$1,676 00	\$695 70	.....	\$9,655 62
Electric light.....	49 33	308 90	177 41	1,156 50	.....	.....	620 03	49 33	.....	2,361 50
Lumber.....	144 60	187 49	161 08	372 92	53 01	6 26	.....	297 61	.....	1,222 97
General repairs.....	121 69	285 44	88 01	291 64	22 88	31 92	.....	281 68	.....	1,123 26
Cleaning bridges.....	.....	94 25	.....	119 61	.....	.....	204 62	.....	.....	418 48
Fuel.....	9 60	190 79	26 45	19 20	3 20	19 20	32 58	.....	.....	301 02
Iron work.....	43 92	47 48	13 94	90 55	43 65	.....	.....	53 05	.....	292 59
Tools and hardware.....	14 56	25 34	8 13	55 63	5 50	4 54	18 99	23 69	.....	156 38
Electric current.....	.....	.....	.....	120 00	.....	.....	.....	.....	.....	120 00
Paint and painting.....	23 05	.....	.....	.....	75 00	.....	.....	70 68	.....	94 48
Sundries.....	3 73	27 52	9 05	10 20	1 45	9 69	22 12	2 23	.....	85 99
Watering roadways.....	.....	31 00	.....	.....	.....	.....	.....	.....	.....	31 00
Water rates.....	.....	8 99	.....	.....	.....	.....	.....	.....	.....	8 99
Secretary.....	.....	.....	.....	.....	.....	.....	.....	.....	\$250 00	250 00
Travelling expenses.....	.....	.....	.....	.....	.....	.....	.....	.....	47 50	47 50
Furniture.....	.....	.....	.....	.....	.....	.....	.....	.....	43 00	43 00
Printing.....	.....	.....	.....	.....	.....	.....	.....	.....	29 17	29 17
Telephone.....	.....	.....	.....	.....	.....	.....	.....	.....	16 85	16 85
Stationery.....	.....	.....	.....	.....	.....	.....	.....	.....	5 10	5 10
Totals.....	\$1,044 44	\$3,357 16	\$1,154 07	\$4,029 25	\$644 44	\$1,594 61	\$2,574 34	\$1,473 97	\$391 62	\$16,263 90
* Extra help during vacations of draw-tenders included in above.....	14 00	70 00	28 00	43 00	14 00	63 00	56 00	42 00	.....	330 00

Revenue, February 1, 1904, to January 31, 1905.

DATE.	L. B. and Page.	Items.	Bridge.	Total.	One-half Boston.	One-half Cambridge.
May 4..	6-27..	Louis Gaffer, house rent.....	Craigie	\$40 00	\$20 00	\$20 00
		Philip Grebber, " "	"	60 00	30 00	30 00
		Yacht "Gleam," wharfage..	"	40 00	20 00	20 00
Aug. 10..	6-54..	J. Freedman, house rent.....	"	20 00	10 00	10 00
Sept. 9..	6-62..	" " "	"	20 00	10 00	10 00
		J. A. Gorman, old lumber....	Harvard	1 00	50	50
		W. B. Hoitt, Farrell boat-house.....	W. Boston	25 00	12 50	12 50
		W. B. Hoitt, old wood.....	"	50 00	25 00	25 00
		A. W. Smith, wharfage, barge "Charles F. Mather,"	Craigie	20 00	10 00	10 00
Oct. 10..	6-71..	J. Freedman, house rent.....	"	20 00	10 00	10 00
		Wharfage, boat-house	"	40 00	20 00	20 00
		J. Freedman, house rent.....	"	20 00	10 00	10 00
		" " "	"	20 00	10 00	10 00
		Mr. Gallishaw, old wood	W. Boston	1 50	75	75
		Samuel Gould, " "	"	3 50	1 75	1 75
		Yacht "Gleam," wharfage..	Craigie	40 00	20 00	20 00
		Sprague & Nugent, advertising space.....	"	35 00	17 50	17 50
		J. Freedman, house rent.....	"	20 00	10 00	10 00
		J. A. Gorman, old wood	Harvard	1 00	50	50
Nov. 1..	6-79..	Metropolitan Coal Company, repairing bridge.....	N. Harvard street	46 70	23 35	23 35
" 21..	6-89..	J. Freedman, house rent.....	Craigie	17 65	8 83	8 82
		Boston Advertising Company, advertising space...	"	40 00	20 00	20 00
		Boston Elevated Railway Company, rent cable house,	Camb. and N. Harvard streets	100 00	50 00	50 00
		W. B. Hoitt, old wood.....	W. Boston	29 50	14 75	14 75
" 29..	6-91..	Boston Athletic Association, rent and wharfage.....	"	50 00	25 00	25 00
Jan. 13..	6-119..	J. Freedman, house rent.....	Craigie	40 00	20 00	20 00
		W. B. Hoitt, old wood.....	W. Boston	9 75	4 87	4 88
		Total.....	.....	\$810 60	\$405 30	\$405 30

Number of Times the Draws in the Boston and Cambridge Bridges have been Opened, and the Number of Vessels which have Passed through for the Year 1904.

DATE.	CAMBRIDGE STREET.		CRAIGIE'S.		ESSEX STREET.		HARVARD.		NO. HARVARD STREET.		PRISON POINT.		WEST BOSTON.		WESTERN AVENUE.	
	No. of draw open- Ings.	No. of vessels pass- ing through.	No. of draw open- Ings.	No. of vessels pass- ing through.	No. of draw open- Ings.	No. of vessels pass- ing through.	No. of draw open- Ings.	No. of vessels pass- ing through.	No. of draw open- Ings.	No. of vessels pass- ing through.	No. of draw open- Ings.	No. of vessels pass- ing through.	No. of draw open- Ings.	No. of vessels pass- ing through.	No. of draw open- Ings.	No. of vessels pass- ing through.
1904.																
January.....	2	5	85	139	4	7	20	24	.....	.....	11	32	12	20	.....	.....
February.....	.....	.....	41	64	.....	.....	.....	.....	.....	.....	16	48	.....	.....	.....	.....
March.....	6	9	130	205	6	9	16	31	4	6	24	48	24	41	4	6
April.....	53	84	172	272	59	92	86	131	28	41	25	51	108	189	36	65
May.....	6	30	229	371	20	29	53	74	4	18	23	43	101	185	4	22
June.....	24	41	268	477	24	41	73	100	24	41	29	83	164	315	24	41
July.....	16	24	235	434	16	24	76	90	16	24	49	101	143	308	16	24
August.....	24	39	308	530	22	39	83	107	22	36	52	107	106	232	22	36
September.....	12	18	256	447	11	18	74	88	10	15	24	57	75	150	10	15
October.....	20	32	251	453	22	33	86	102	20	32	29	62	340	731	20	32
November.....	20	34	232	434	20	34	92	109	8	12	23	43	84	195	8	12
December.....	.....	.....	201	370	.....	.....	74	80	.....	.....	31	55	106	231	.....	.....
Totals.....	183	326	2,408	4,196	204	326	733	936	136	225	336	730	1,263	2,597	144	253

APPENDIX I.

REPORT OF THE CITY ENGINEER ON SPECIAL
WORK.

CITY OF BOSTON, ENGINEERING DEPARTMENT,
50 CITY HALL, February 1, 1905.

HON. JAMES DONOVAN,

Superintendent of Streets :

SIR, — I herewith submit the following report of the work done for the Street Department during the year ending January 31, 1905 :

ATLANTIC-AVENUE RECONSTRUCTION.

The roadway on the water side of Atlantic avenue, between Eastern avenue and the southerly driveway leading to Rowe's wharf, has been widened about eleven and one-half feet by reducing the width of the sidewalk to about one-half its former width. Where the old sidewalk was supported by pile work, the whole of the old timber was removed and new hard pine timber substituted. The old piles were capped at a lower grade so as to ensure sound wood for the bearings of the new caps, and a large number of new oak piles were driven wherever there was any question of the efficiency of the old piles to carry the new roadway or sidewalk. New catch-basins were built at the new curb line where the roadway was supported by filled material, and at other places cast-iron scuppers were set in the curb at frequent intervals to permit the surface water to discharge directly into the docks. The entire paving east of the easterly track of the Boston Elevated Railway and nearly all the paving between the rails of this track was relaid with pitch and pebble joints. A new brick sidewalk was laid for the whole length of the avenue reconstructed, and hard pine fences were built where buildings did not afford proper protection.

The Boston Elevated Railway's stairs at the Rowe's wharf station had not been removed or changed at the close

of work in December, so that a small amount of work remains to be done at this point. The work was done under three contracts by D. J. Kiley, Patrick McGovern and the Metropolitan Contracting Company. The work was completed about the middle of December, but final payments have not been made at the date of this report.

CHARLES RIVER AVENUE.

An estimate was made of the cost of putting the Boston end of Charles-river bridge in repair for use as a dumping wharf.

CIRCUIT-STREET FENCE.

An iron fence and gate have been built on the wall on Circuit street, Roxbury, at the St. Joseph's church, under a contract with P. J. Dinn & Co., dated October 1, 1904, at a cost of \$395.

EAST BOSTON FERRIES.

South Ferry, Boston Side.—A report was made recommending new heads on the three piers; the work was done under the supervision of the Ferry Division.

North Ferry, East Boston Side.—An estimate was made for a new wharf and coal-pocket, and plans for the work have been begun.

Plans have been made for repairing the north pier, but no work has yet been done on it.

FRANKLIN-STREET SUBWAY.

The building of the approaches to the Franklin-street subway, in progress at the date of the last report under a contract with William Crane, dated October 28, 1903, was completed about May 1, 1904, at a total cost of \$3,652.05.

The iron railings on the coping of the side walls of the approaches were furnished and erected under a contract with W. A. Snow & Co., dated January 14, 1904, at a cost of \$845.35. Under a second contract with the same firm, a hand-rail was placed on the side walls of the approaches at a cost of \$254.13.

FORT HILL WHARF.

A report was made recommending repairs on this wharf and renewing the deck on the sanitary wharf. The work was done by Thomas Uniacke at a cost of \$900.

GAINSBOROUGH-STREET FOOT-BRIDGE.

A contract was made with the Eastern Bridge and Structural Company, dated March 26, 1904, for building the steel superstructure of the foot-bridge on Gainsborough street, for the sum of \$2,700, and the work was completed September 24, 1904.

HARVARD-STREET BRIDGE.

Plans and specifications were made last year by this department for building a new bridge and masonry abutments at Harvard street over the Midland Division of the New York, New Haven & Hartford Railroad. The contract for building the abutments was awarded to the Metropolitan Contracting Company, and work was commenced about the first of August and completed the latter part of November. The abutments are built of granite, laid solid in Portland cement mortar, with cement concrete backing and foundations. The cost for contract work was \$13,394.88.

Upon the abutments was built a through steel plate girder bridge, across the railroad location, on a slight skew, and consists of three girders spaced 22 feet 10½ inches on centres and are 59 feet 6½ inches long, centre to centre of end bearings; the floor beams are of steel, supporting a floor system of hard-pine stringers and 4-inch spruce deck plank, upon which is laid a wearing surface of 2-inch spruce. The centre girder divides the roadway into two parts, each 13 feet 9 inches in the clear; there are two sidewalks, each 7 feet 4½ inches wide, the total width of the bridge being 45 feet 9 inches, centre to centre of girders.

The contract for building the steel superstructure was awarded to the Eastern Bridge and Structural Company of Worcester at a cost of \$4,092.94. The work was commenced about the middle of November and the south roadway was opened to travel December 22, and the bridge was completed and opened to travel December 29.

NORFOLK-STREET BRIDGE.

Plans and specifications were made last year by this department for building a new bridge and masonry abutments at Norfolk street near Dorchester station, over the Midland Division of the New York, New Haven & Hartford Railroad.

The contract for building the abutments was awarded to the Metropolitan Contracting Company; the work was com-

menced in August and was completed December 24. The abutments are built of granite, laid solid in Portland cement mortar with cement concrete foundations and backing. The total cost for contract work was \$26,829.50.

The contract for the steel superstructure was awarded to the Boston Bridge Works, October 18, 1904, for \$11,996.

PAVING WHARF NO. 2, 600 ALBANY STREET.

As stated in the last annual report the old wharf at this place has been replaced by building a granite sea-wall on three sides of it and the space between the walls filled solid with earth and gravel.

The work was done under a contract with John P. Cavanagh, and was completed June 28, at a cost for contract work of \$26,240.10.

Some additional dredging was done in the North and South docks by the Bay State Dredging Company at a cost of \$730.80.

ASSESSMENT STREETS.

Working plans, specifications and forms of contract were prepared and forwarded to the Street Department for the construction of the following assessment streets :

Belgrade avenue, South street to Anawan avenue.

Bennington street, Prescott street northeasterly 650 feet.

Bernard street, Talbot avenue to N. E. Railroad.

Causeway street, Beverly street northeasterly 142 feet.

Dorchester street, Eighth street to Dorchester avenue.

Franklin street, Cambridge street to B. & A. Railroad.

Hyde Park avenue, Walk Hill street to 288 feet north of Ashland street.

PLANS AND SPECIFICATIONS FOR REPAVING STREETS.

Preliminary surveys were made, and the working plans, specifications and forms of contract were prepared and forwarded to the Street Department, for repaving the following streets :

* *Albion street*, Castle street to Dover street.

* *Arlington avenue*, Alford street to Somerville line.

Ashburton place, Bowdoin street to Somerset street.

Barton court, Barton street to Brighton street.

* *Beach street*, Harrison avenue to Atlantic avenue.

* Plans only were forwarded.

- * *Bellevue street*, Brookline avenue to Park street.
- * *Bolton street*, F street to Dorchester street.
- Boylston street*, Dartmouth street to B. & A. Railroad bridge.
- Boylston street*, B. & A. Railroad bridge to Massachusetts avenue.
- Bullard street*, Bowdoin street to Bowdoin avenue.
- Causeway street*, Haverhill street, across Beverly street.
- Columbus avenue*, Ferdinand street to B. & A. Railroad bridge.
- Court street*, Washington street to Tremont street.
- Court square*, westerly roadway.
- E street*, West Seventh street to West Eighth street.
- East Second street*, L street to N street.
- Emerald street*, Dover street to Castle street.
- Essex street*, Kingston street to Lincoln street.
- Front street*, Austin street to Warren avenue.
- G street*, East Eighth street to Columbia road.
- Hamilton street*, Bowdoin street to Mt. Everett street.
- Harris street*, Hanover street to North street.
- Hawes street*, Congress street to Kilby street.
- * *Haynes street*, Marginal street to Orleans street.
- * *Monument street*, Bunker Hill street to Medford street.
- Mt. Vernon street*, Dorchester avenue to Shoreham street.
- * *Neponset avenue*, Minot street to Neponset bridge.
- * *New street*, Maverick street to Cross street.
- Norfolk avenue*, Marshfield street to East Cottage street.
- Norman street*, Green street to South Margin street.
- Northampton street*, Columbus avenue to Tremont street.
- * *North Bennet street*, Salem street to Hanover street.
- Poplar street*, Washington street to Sycamore street.
- Roxbury street*, Washington street to Guild row.
- South street*, Beach street to Kneeland street.
- South Margin street*, Staniford street to Norman street.
- Warren avenue*, Warren Bridge to Front street.
- Washington street*, Roxbury street to Marvin street.
- West Dedham street*, Shawinut avenue to Tremont street.
- West Newton street*, Tremont street to Columbus avenue.
- * *West Seventh street*, Dorchester avenue to D street.

MISCELLANEOUS.

Preliminary surveys have been made and plans prepared for repaving the following streets :

- Allston street*, Brighton avenue to Washington street.
- Ashford street*, Malvern street to Pratt street.
- Bolton street*, C street to F street.
- Columbus avenue and Park square*, Eliot street to Boylston street.
- Congress street*, Fort Point Channel to Pittsburg street.

* Plans only were forwarded.

Dorchester av nue, Shawmut Branch Railroad to Park street.
East Second street, N street to P street.
Eliot street, Washington street to Columbus avenue.
Essex street, Harrison avenue to Kingston street.
Newland street, West Dedham street to West Brookline street.
Norfolk avenue, Magazine street to Marshfield street.
Orleans street, Sumner street to Webster street.
Shawmut avenue, Springfield street to Massachusetts avenue.
Silver street, D street to G street.
South street, Centre street to Jamaica street.
Union street, Main street to Rutherford avenue.
Warren street, Cambridge street to the Brookline line.
Washington street, Elmore street to Dimock street.

GRADING STREET RAILWAY TRACKS.

Grades for tracks in the following streets have been determined, and the necessary surveys made for determining the same.

BOSTON ELEVATED RAILWAY COMPANY.

Arlington avenue, Alford street to the Somerville line.
Belgrade avenue, South street to near Anawan avenue.
Bennington street, Prescott street northeasterly 650 feet.
Boylston street, Dartmouth street to B. & A. R.R. bridge.
Boylston street, B. & A. R.R. bridge to Massachusetts avenue.
Cambridge street, Harvard avenue to Allston bridge.
Causeway street, Haverhill street to Medford street.
Columbus avenue, Ferdinand street to B. & A. R.R. bridge.
Dorchester avenue, Shawmut Branch Railroad to Park street.
Dorchester avenue, at Washington street (Lower Mills).
Hyde Park avenue, Walk Hill street to Ashland street.
Neponset avenue, Minot street to Neponset bridge.
Roxbury street, Washington street to Guild row.
South street, Centre street to Jamaica street.
Warren avenue, drawbridge to Front street.
Washington street, Roxbury street to Marvin street.
Washington street, Elmore street to Dimock street.
West Seventh street, C street to D street.
Wilton street, Cambridge street to Grant street.

Total length of single track grades = 9.13 miles.

MISCELLANEOUS PLANS, SPECIFICATIONS, ETC.

Atlantic avenue, easterly sidewalk from Broad street to Eastern avenue. A plan was made showing proposed new edgestone line, and grades were determined for said edgestone.
Congress street, at Engine-house 38 and 39. A report was made as to the grade of edgestone and roadway in this vicinity.

Dudley street, southerly side from Mt. Pleasant avenue to Mt Pleasant place. A plan was made showing new location of edgestone, with grades for same, on account of widening the street between the above limits.

Hyde Park avenue, at Stony Brook. A plan and specifications were prepared for rebuilding the wooden bridge at this place on account of the widening of Hyde Park avenue.

Lowell street, Minot street to Brighton street. A plan was made for repaving the northerly side of Lowell street, so that teams might more easily back up to freight-house.

Malvern street, Ashford street 180 feet southerly. A study was made for a revised grade of this portion of Malvern street to connect with a proposed revised grade of Ashland street.

South street, West Roxbury, from Walk Hill street about 440 feet westerly. A plan was made for revising the grade for the sidewalk on southerly side of street.

State street, from Atlantic avenue about 140 feet westerly. A plan was made showing grades for paving roadway in the vicinity of the new Atlantic Chambers.

Washington street, from Townsend street to Forest Hills. An estimate was prepared of the cost of making the sidewalks uniformly 10 feet wide.

Plans showing details of construction of street and other structures have been made from time to time as required. The street book, giving lengths and areas of pavements in accepted streets and public alleys, has been corrected to February 1, 1904, and is now being corrected to February 1, 1905.

Respectfully submitted,

WILLIAM JACKSON,
City Engineer.

APPENDIX J.

REPORT OF CHIEF SMOKE INSPECTOR.

64 PEMBERTON SQUARE,
BOSTON, February 1, 1905.

HON. JAMES DONOVAN,

Superintendent of Streets :

DEAR SIR, — I herewith respectfully submit a report of the work performed by this office during the past year.

From personal observation and from the small number of complaints received, I am led to believe that there is an improvement in the operation of boiler plants using soft coal in this city. Personal interviews with the owners of power and heating plants, which have been the cause of complaints in the past, have generally resulted in an improvement in the firing of boilers, and the consequent reduction in the emission of black smoke. I believe that the law is being more generally observed at present than at any time since its passage.

BOILER APPLICATIONS.

During the year 294 applications have been received from the Building Department for boiler permits, and were disposed of as follows :

Signed to use hard coal	282
New consumers adopted	11
Unsigned	1
	<hr/>
	294
	<hr/>

SPECIAL REPORTS.

April 9. Report on complaint of Mr. Johansin, 15 Hooper street.

April 9. Report on complaint of B. S. Maccloud, 3 Haskell street.

March 14. Report on communication received from Austin E. Griffith.

July 16. Report on complaint of Alfred Clarke.

July 26. Report on complaint of Pneumatic Service Company, 161 Devonshire street.

July 27. Report on complaints against the Minot Plant, Devonshire street.

July 28. Report on complaint of E. B. Goodsell.

July 29. Report on complaint of A. B. Abbott.

January 28. Report on complaint of Norman Cameron.

January 28. Report on order received from Common Council.

January 31. Report on complaint of W. Dwyer, 749 Shawmut avenue.

Nova Scotia Coal.

Importations of Coal from Nova Scotia at the Port during the Year ending January 31, 1905.

MONTHS.	Tons.	Value.
February, 1904.....	33,902	\$42,908
March.....	64,103	97,107
April.....	50,627	65,957
May.....	31,300	39,126
June.....	51,750	64,689
July.....	37,950	47,438
August.....	43,500	54,375
September.....	41,400	51,750
October.....	48,150	60,188
November.....	50,370	62,963
December.....	55,378	86,193
January, 1905.....	55,096	94,216
Total.....	563,526	\$766,910

Nova Scotia coal recorded at the Collector's office (Boston Custom House) for the year ending January 31, 1905, shows 563,526 tons as against 662,788 for the year ending January 31, 1904.

SUMMARY.

I submit a brief summary of work for the year ending January 31, 1905.

Number of applications for boiler permits received . . .	294
Number of smoke preventers adopted	11
Number agreeing to burn hard coal	282
Number of short observations taken	135
Number of special reports	11
Number of special requests for observations received . . .	4

Respectfully submitted,

JOHN J. O'NEIL,

Chief Smoke Inspector.

APPENDIX K.

REPORT OF THE CIVIL SERVICE CLERK.

BOSTON, February 1, 1905.

HON. JAMES DONOVAN,

Superintendent of Streets :

DEAR SIR,— I submit herewith a report of the work performed in connection with the Civil Service Commission, together with a statement of the force employed and eligible for employment for the year ending January 31, 1905:

Requisitions made	90
Requisitions cancelled	2
Certifications returned without any selection being made	25
Number of men called for	156
Number of men certified	249
Number of men selected, including veterans	128
Number of veterans appointed	5
Number of men appointed provisionally under Civil Service Rule No. 36	7
Applications made for promotion	13
Promotions allowed	12
Promotions allowed provisionally	1
Provisional appointments made permanent	5
Requests for permission to reinstate	7
Requests for permission to reinstate allowed, including one veteran	3
Requests for permission to reinstate not allowed	4

Transfers made from other city and state departments to the Street Department with the approval of the Civil Service Commission are as follows:

From Bath Department	1
“ Engineering Department	1
“ Lamp Department	1
“ Public Buildings Department	1
“ Metropolitan Water and Sewerage Board	3
	—
	7

Transfers from the Street Department to other city and state departments with the approval of the Civil Service Commission are as follows:

To Public Buildings Department	2
Provisional appointments cancelled on account of failure to pass the required examination	2
Number of discharges forwarded to Civil Service Commissioners	174

The records of the department show that there are now 3,519 persons eligible for employment in the several divisions, and of that number 2,997 were upon the January, 1905, pay-rolls.

**Comparative Table Showing the Number of Employees
February 1, 1904, and February 1, 1905.**

DATE.	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Street Watering.	Totals.
February 1, 1904.....	8	943	963	515	360	166	167	10	3,132
February 1, 1905.....	8	916	877	516	353	151	166	10	2,997

Respectfully submitted,

JOHN J. QUINN,

Civil Service Clerk.

APPENDIX L.

FORMER SUPERINTENDENTS AND DOCUMENT
NUMBERS OF ANNUAL REPORTS.

Bridge Department before 1891.

Previous to 1886, under charge of City Engineer.

NAME.	Year.
Bartholomew M. Young.....	1886 to 1889
James H. Nugent.....	1889 to 1891

Bridge Department before 1891.

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Annual report.....	1886	1887	29
“ “	1887	1888	26
“ “	1888	1889	29
“ “	1889	1890	22
“ “	1890	1891	*

* Published in annual report, Executive Department.— Part I., City Document, No. 1, 1891.

Paving Department before 1891.

NAME.	Year.
Enoch Patterson, Superintendent Streets and Drains.....	1825 to 1831
Zephaniah Sampson, “ “ “ “	1831 to 1846
Thomas Hunting, Superintendent.....	1846 to 1853
Alfred T. Turner, “	1853 to 1864
Charles Harris, “	1864 to 1883
Nehemiah T. Merritt, “	1883
James J. Flynn, “	1883
Charles Harris, “	1884
Michael Meehan, “	1884 to 1886
John W. McDonald, “	1886 to 1889
J. Edwin Jones, “	1889 to 1891

Paving Department before 1891.

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Quarterly report.....	.....	1851	6
“ “ “ “ .....	.....	1851	29
Annual report.....	1851	1852	2
“ “	1852	1853	6
“ “	1853	1854	6
“ “	1854	1855	5
“ “	1855	1856	3
“ “	1856	1857	3
“ “	1857	1858	3
“ “	1858	1859	5
“ “	1859	1860	6
“ “	1860	1861	5
“ “	1861	1862	4
“ “	1862	1863	3
“ “	1863	1864	3
“ “	1864	1865	7
“ “	1865	1866	3
“ “	1866	1867	6
“ “	1867	1868	9
“ “	1868	1869	14
“ “	1869	1870	13
“ “	1870	1871	12
“ “	1871	1872	16
“ “	1872	1873	21
“ “	1873	1874	25
“ “	1874	1875	27
“ “	1875	1876	30
“ “	1876	1877	38
“ “	1877	1878	29
“ “	1878	1879	24
“ “	1879	1880	24
“ “	1880	1881	48
“ “	1881	1882	51
“ “	1882	1883	47
“ “	1883	1884	46
“ “	1884	1885	97
“ “	1885	1886	30
“ “	1886	1887	16
“ “	1887	1888	23
“ “	1888	1889	30
“ “	1889	1890	19
“ “	1890	1891	*

*Published in annual report, Executive Department, Part II., City Document No. 1, 1891.

Sewer Department before 1891.

NAME.	Year.
Enoch Patterson, Superintendent.....	1825 to 1831
Zephaniah Sampson, ".....	1831 to 1837
Charles B. Wells, ".....	1837 to 1856
Simeon B. Smith, ".....	1856 to 1863
William H. Bradley, ".....	1863 to 1883
Horace A. Moses, ".....	1883 to 1885
Thomas J. Young, ".....	1885 to 1887
Seth Perkins, ".....	1887 to 1889
Charles Morton, ".....	1889 to 1891

Sewer Department before 1891.

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Annual report.....	1859	1861	11
" ".....	1860	1861	12
" ".....	1861	1862	12
" ".....	1862	1863	13
" ".....	1863	1864	11
" ".....	1864	1865	5
" ".....	1865	1866	6
" ".....	1866	1867	8
" ".....	1867	1868	13
" ".....	1868	1869	11
" ".....	1869	1870	3
" ".....	1870	1871	11
" ".....	1871	1872	10
" ".....	1872	1873	13
" ".....	1873	1874	12
" ".....	1874	1875	17
" ".....	1875	1876	11
" ".....	1876	1877	13
" ".....	1877	1878	15
" ".....	1878	1879	11
" ".....	1879	1880	16
" ".....	1880	1881	19
" ".....	1881	1882	18
" ".....	1882	1883	16
" ".....	1883	1884	43
" ".....	1884	1885	
" ".....	1885	1886	58
" ".....	1886	1887	69
" ".....	1887	1888	81
" ".....	1888	1889	129
" ".....	1889	1890	14
" ".....	1890	1891	*

*Published in annual report, Executive Department, Part II., City Document, No. 1, 1891.

Health Department before 1891.

Sanitary.

NAME.	Year.
Ezra Forristall, Superintendent	1853 to 1854
Joseph W. Coburn, "	1854 to 1855
Ezra Forristall, "	1855 to 1860
George W. Forristall, "	1860 to 1890

Health Department before 1891.

Sanitary.

NAME OF DOCUMENT.	Year.	Pub. Year.	No. of Doc.
Annual report	1853	1854	7
" "	1854	1855	6
" "	1855	1856	4
" "	1856	1857	4
" "	1857	1858	4
" "	1858	1859	4
" "	1859	1860	5
" "	1860	1861	6
" "	1861	1862	5
" "	1862	1863	5
" "	1863	1864	4
" "	1864	1865	4
" "	1865	1866	8
" "	1866	1867	7
" "	1867	1868	8
" "	1868	1869	12
" "	1869	1870	4
" "	1870	1871	10
" "	1871	1872	17
" "	1872	1873	40
Annual reports from 1873 to 1884, inclusive; the Superintendent's report was embodied in the report of the Board of Health			
Annual report	1885	1886	45
" "	1886	1887	22
" "	1887	1888	16
" "	1888	1889	23
" "	1889	1890	21
" "	1890	1891	*

* Published in annual report, Executive Department, Part II., City Document, No. 1, 1891.

Commissioners of Cambridge Bridges before 1891.

(West Boston, Canal and Prison Point.)

NAME.	Year.
Frederick W. Lincoln, Commissioner for Boston..	May 22, 1871, to March, 1901.
Ezra Parmenter, Commissioner for Cambridge....	June 14, 1871, to Jan. 31, 1883.
William J. Marvin, Commissioner for Cambridge..	March 28, 1883, to July 22, 1904.
George M. Clukas, Commissioner for Cambridge..	July 26, 1904, to present time.

NOTE.—Harvard bridge added in 1892. Essex street, Cambridge street, North Harvard street, and Western avenue bridges to Cambridge were transferred from Street Department, July 1, 1898.

Commissioners of Cambridge Bridges before 1891.

(West Boston, Canal and Prison Point.)

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Annual report.....	1871	1872	19
" ".....	1872	1873	12
" ".....	1873	1874	16
" ".....	1874	1875	23
" ".....	1875	1876	20
" ".....	1876	1877	12
" ".....	1877	1878	10
" ".....	1878	1879	8
" ".....	1879	1880	12
" ".....	1880	1881	8
" ".....	1881	1882	15
" ".....	1882	1883	15
" ".....	1883	1884	19
" ".....	1884	1885	8
" ".....	1885	1886	12
" ".....	1886	1887	19
" ".....	1887	1888	25
" ".....	1888	1889	22
" ".....	1889	1890	20
" ".....	1890	1891	*

*Published in annual report, Executive Department, Part I., City Document, No. 1, 1891.

Ferry Department before 1895.

NAME.	YEAR.
Board of Ferry Directors.....	1870 1891
William J. Burke, Superintendent.....	May 1, 1895
Thomas Kellough.....	May 1, 1895 July 1, 1895

Ferry Department before 1895.

NAME OF DOCUMENT.	For Year.	Pub. Year.	No. of Doc.
Annual report.....	1870	1871	41
“ “	1871	1872	55
“ “	1872	1873	81
“ “	1873	1874	42
“ “	1874	1875	65
“ “	1875	1876	51
“ “	1876	1877	53
“ “	1877	1878	49
“ “	1878	1879	60
“ “	1879	1880	74
“ “	1880	1881	77
“ “	1881	1882	72
“ “	1882	1883	93
“ “	1883	1884	76
“ “	1884	1885	72
“ “	1885	1886	28
“ “	1886	1887	12
“ “	1887	1888	10
“ “	1888	1889	3
“ “	1889	1890	4
“ “	1890	1891	*
“ “	1891	1892	12
“ “	1892	1893	11
“ “	1893	1894	11
“ “	1894	1895	11

*Published in annual report, Executive Department, Part I., City Document. No. 1, 1891.

Street Department since 1891.*Superintendent.*

Henry H. Carter, Member of American Society Civil Engineers.

Resigned December 8, 1894.

Charles R. Cutter, *Acting Superintendent from December 8, 1894, to January 14, 1895.*

Member of the Boston Society Civil Engineers.

Bertrand T. Wheeler, *Superintendent from January 14, 1895, to February 4, 1896.*

Member of the Boston Society Civil Engineers.

Benjamin W. Wells, *Superintendent from February 4, 1896, to February 1, 1900.*

Bertrand T. Wheeler, *Superintendent from February 2, 1900, to November 25, 1901.*

Member of the Boston Society Civil Engineers.

Resigned November 25, 1901.

William Jackson, *Acting Superintendent from November 25, 1901, to January 14, 1902.*

Member of American Society Civil Engineers.

Guy C. Emerson, *Deputy Superintendent in charge of the Department, from November 25, 1901, to January 14, 1902.*

Member of the Boston Society Civil Engineers.

James Donovan, *Superintendent from January 14, 1902, to the present time.*

BRIDGE DIVISION.—John A. McLaughlin, *Deputy Superintendent until June 1, 1895.*

BRIDGE DIVISION.—John P. Wise, *Deputy Superintendent from June 1, 1895, to February 14, 1896.*

BRIDGE DIVISION.—William H. Carberry, *Deputy Superintendent from February 14, 1896, to February 3, 1900.*

BRIDGE DIVISION.—Walter Reed, *Deputy Superintendent from February 5, 1900, to January 22, 1902.*

BRIDGE DIVISION.—Joseph P. Lomasney, *Deputy Superintendent from January 22, 1902, to the present time.*

FERRY DIVISION.—Thomas Kellough, *Deputy Superintendent from July 1, 1895, to February 14, 1896.*

FERRY DIVISION.—William F. McClellan, *Deputy Superintendent from February 14, 1896, to February 3, 1900.*

FERRY DIVISION.—Joseph J. Dennison, *Deputy Superintendent from February 5, 1900, to January 22, 1902.*

FERRY DIVISION.—William J. Donovan, *Deputy Superintendent from January 22, 1902, to the present time.*

PAVING DIVISION.—Charles R. Cutter, *Deputy Superintendent until January 24, 1895.*

PAVING DIVISION.—Darius N. Payson, *Deputy Superintendent from January 24, 1895, to March 1, 1896.*

PAVING DIVISION.—John L. Kelly, *Deputy Superintendent from March 1, 1896, to February 3, 1900.*

PAVING DIVISION.—Darius N. Payson, *Deputy Superintendent from February 5, 1900, to January 24, 1902.*

PAVING DIVISION.—Joshua Atwood, 3d, *Acting Deputy Superintendent from January 24, 1902, to March 26, 1902.*

PAVING DIVISION.—Henry V. Macksey, *Deputy Superintendent from March 26, 1902, to the present time.*

SANITARY DIVISION. — George W. Forristall,* *Deputy Superintendent.*

SANITARY DIVISION. — Philip A. Jackson, *Acting Deputy Superintendent from January 16, 1894, to February 1, 1895.*

SANITARY DIVISION. — Charles A. Young, *Deputy Superintendent from February 1, 1895, to March 1, 1896.*

SANITARY DIVISION. — Patrick O'Shea, *Deputy Superintendent from March 1, 1896, to February 3, 1900.*

SANITARY DIVISION. — Charles A. Young, *Deputy Superintendent from February 5, 1900, to January 22, 1902.*

SANITARY DIVISION. — Daniel P. Sullivan, *Deputy Superintendent from January 22, 1902, to the present time.*

SEWER DIVISION. — Henry W. Sanborn, *Deputy Superintendent until July 10, 1896.*
Member Philadelphia Society Civil Engineers.

SEWER DIVISION. — Charles R. Cutter, *Deputy Superintendent from July 10, 1896, to February 3, 1900.*
Member of the Boston Society Civil Engineers.

SEWER DIVISION. — Guy C. Emerson, *Deputy Superintendent from February 5, 1900, to November 25, 1901, and from January 14, to January 22, 1902.*
Member of the Boston Society Civil Engineers.

SEWER DIVISION. — Henry W. Sanborn, *Acting Deputy Superintendent from November 25, 1901, to January 14, 1902.*
Member Philadelphia Society Civil Engineers.

SEWER DIVISION. — George Phillips, *Deputy Superintendent from January 22, 1902, to the present time.*

STREET CLEANING DIVISION. — Philip A. Jackson, *Deputy Superintendent until March 22, 1895.*

STREET CLEANING DIVISION. — Benjamin M. Cram, *Deputy Superintendent from March 22, 1895, to March 1, 1896.*

STREET CLEANING DIVISION. — Joshua Atwood, 3d, *Deputy Superintendent from March 1, 1896, to February 3, 1900.*
Member of the Boston Society Civil Engineers.

STREET CLEANING DIVISION. — Frank H. Haynes, *Deputy Superintendent from February 5, 1900, to April 16, 1901.*
Resigned April 16, 1901.

STREET CLEANING DIVISION. — Frank C. Shepard, *Deputy Superintendent from April 16, 1901, to January 22, 1902.*

STREET CLEANING DIVISION. — Joseph J. Norton, *Deputy Superintendent from January 22, 1902, to the present time.*

STREET WATERING DIVISION. — M. Edward Libby, *Deputy Superintendent from March 6, 1895, to March 1, 1896.*

STREET WATERING DIVISION. — Thomas J. Finneran, *Deputy Superintendent from March 1, 1896, to February 3, 1900.*

STREET WATERING DIVISION. — Frederick Hammond, *Deputy Superintendent from February 5, 1900, to January 22, 1902.*

STREET WATERING DIVISION. — Ambrose Woods, *Deputy Superintendent from January 22, 1902, to the present time.*

* Died January 12, 1894.

BOSTON AND CAMBRIDGE BRIDGES.—Henry H. Carter, *ex-officio*, *Commissioner for Boston, until December 8, 1894.*

Charles R. Cutter, *ex-officio*, *Acting from December 8, 1894, to January 14, 1895.*

Bertrand T. Wheeler, *ex-officio, from January 14, 1895, to February 4, 1896.*

Benjamin W. Wells, *from February 4, 1896, to February 1, 1900; ex-officio, to May 26, 1898.**

Bertrand T. Wheeler, *from February 2, 1900, to November 25, 1901.*

Guy C. Emerson, *from November 25, 1901, to January 14, 1902.*

James Donovan, *from January 14, 1902, to October 28, 1904.*

Joseph P. Lomasney, *from October 28, 1904, to the present time.*

William J. Marvin, *Commissioner for Cambridge. †*

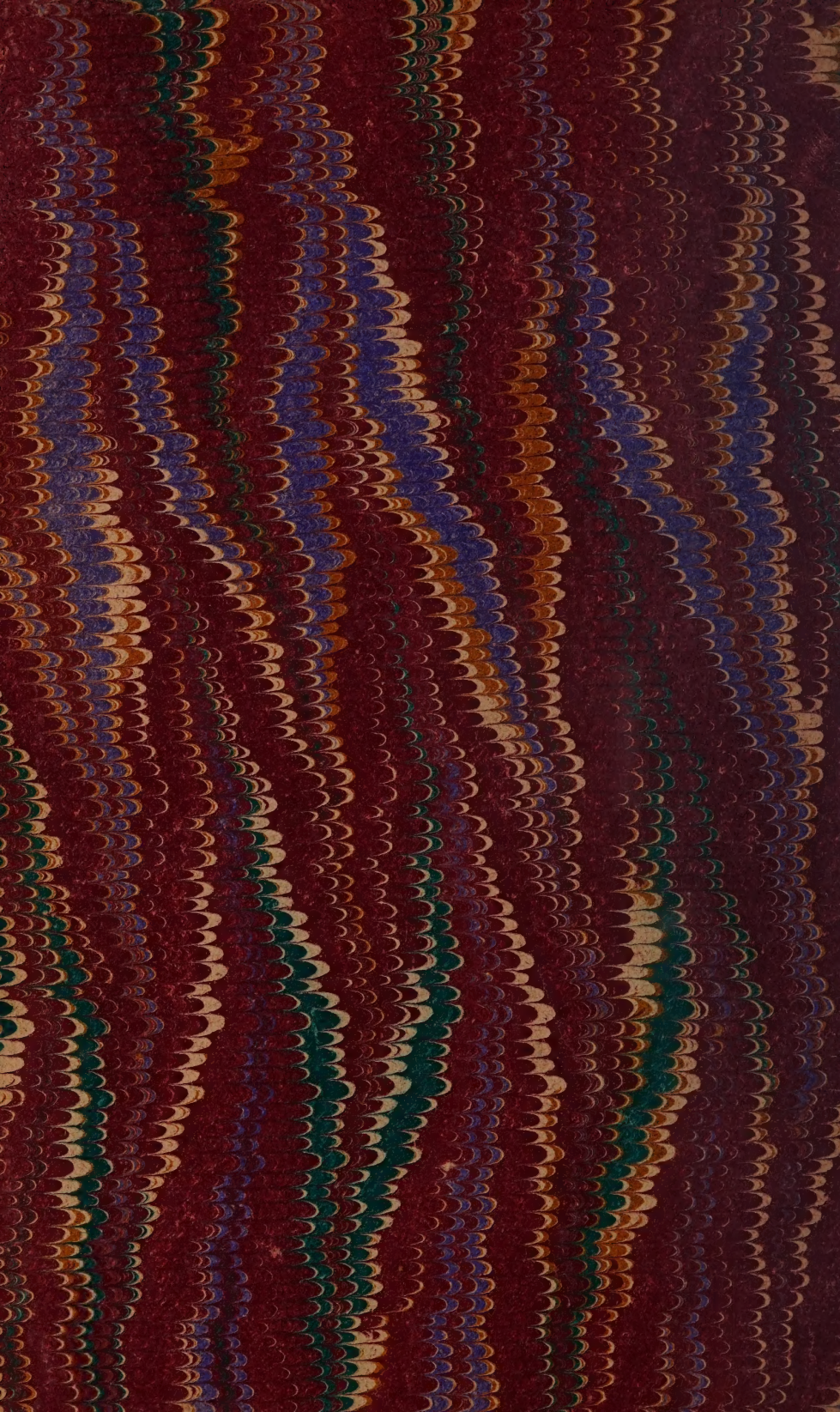
George M. Clukas, *July 26, 1904, to the present time.*

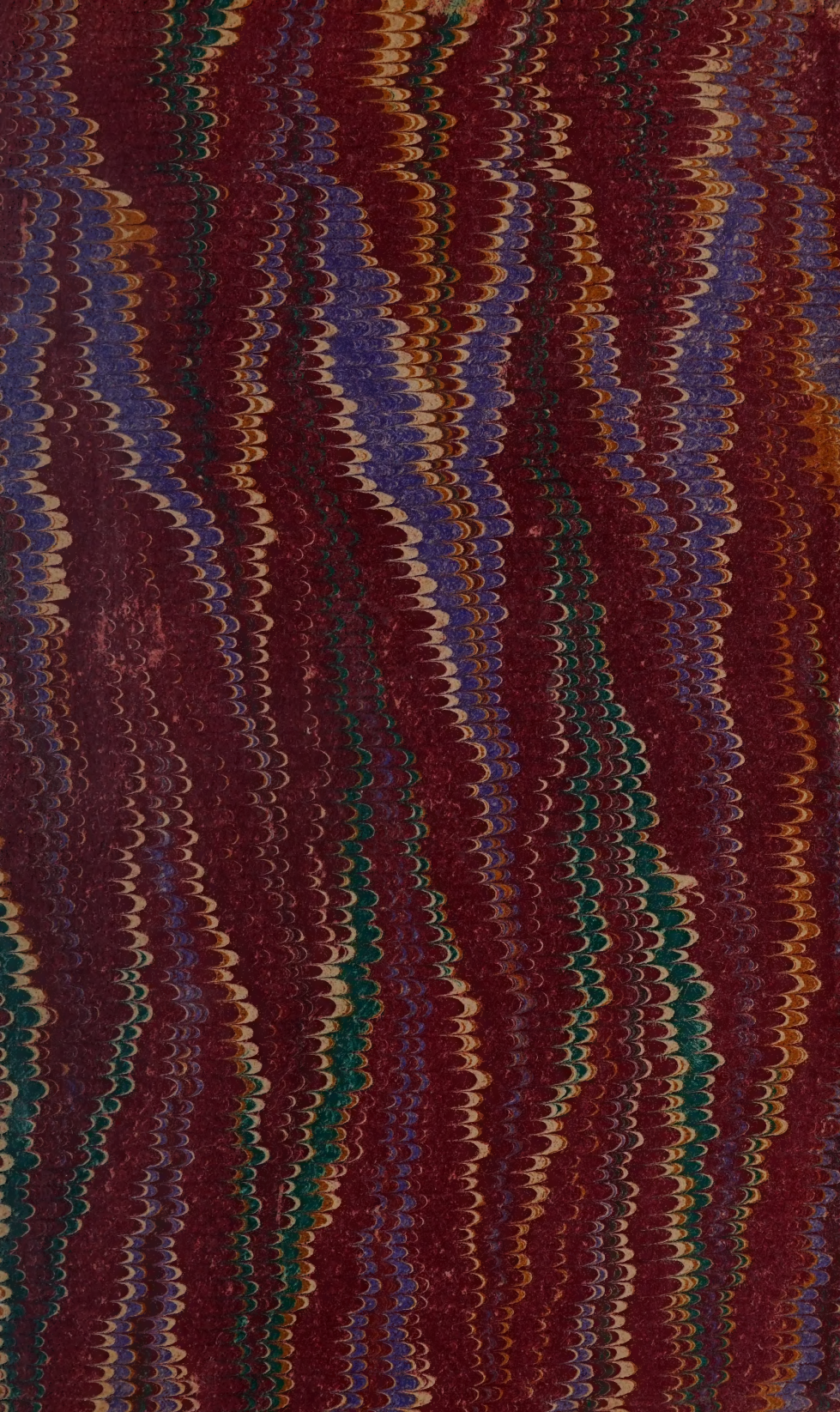
* See Chap. 467, Acts of 1898.

† Died July 22, 1904.

Street Department.

NAME OF DOCUMENT.					For Year.	Pub. Year.	No. of Doc.
Annual report, Executive Dept. Part II.....					1891	1892	36
" " " " "					1892	1893	34
" " " " "					1893	1894	34
" " " " "					1894	1895	34
" " " " "					1895	1896	29
" " " " "					1896	1897	29
" " " " "					1897	1898	34
" " " " "					1898	1899	35
" " " " "					1899	1900	38
" " " " "					1900	1901	38
" " " " "					1901	1902	38
" " " " "					1902	1903	40
" " " " "					1903	1904	40
" " " " "					1904	1905	40







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